

Service Manual

Cassette Deck

RS-M263

(Silver Face)
(Black Face)

3-Head Cassette Deck with Auto Tape Selector



This is the Service Manual for the following areas.

- ☐ For all European areas except United Kingdom.
☐ For United Kingdom.

RS-M24 MECHANISM SERIES

Specifications

Track system:	4-track 2-channel stereo recording and playback	Inputs:	MIC; sensitivity 0.25mV, applicable microphone impedance 400Ω—10kΩ
Motor:	Electrical governor motor		LINE; sensitivity 60mV, input impedance 40kΩ
Tape speed:	4.8cm/s	Outputs:	LINE; output level 700mV, load impedance 22kΩ over
Wow and flutter:	0.048% (WRMS), ±0.14% (DIN)		HEADPHONES; output level 125mV, load impedance 8Ω
Frequency response: Metal tape;	18—21,000Hz 25—20,000Hz (DIN) 30—18,000Hz ±3dB	Bias frequency:	80kHz
CrO ₂ tape;	18—20,000Hz 25—19,000Hz (DIN) 30—17,000Hz ±3dB	Heads:	3-head system; 2-SX (Sendust Extra) heads for record/playback (combination type) 1-sendust/ferrite double-gap head for erasure
Normal tape;	18—18,000Hz 25—17,000Hz (DIN) 30—15,000Hz ±3dB	Power requirement:	AC; 110/125/220/240V, 50-60Hz preset power voltage 220V for United Kingdom 240V
Signal-to-noise ratio: Dolby* NR in;	68dB (above 5kHz)	Power consumption:	17W
Dolby NR out;	58dB (signal level=max. input level A weighted, CrO ₂ type tape)	Dimensions:	43.0cm(W) × 11.9cm(H) × 28.2cm(D)
Fast forward and rewind time: Approx. 90 seconds with C-60 cassette tape		Weight:	5.3kg

Specifications are subject to change without notice.

* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

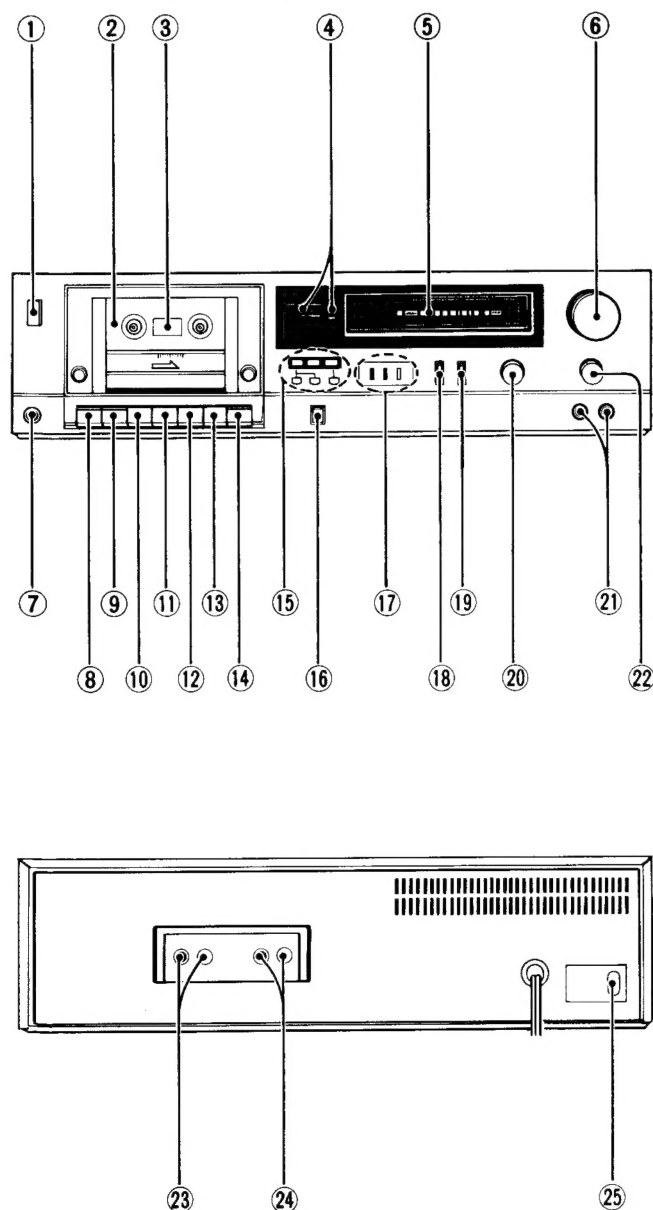
Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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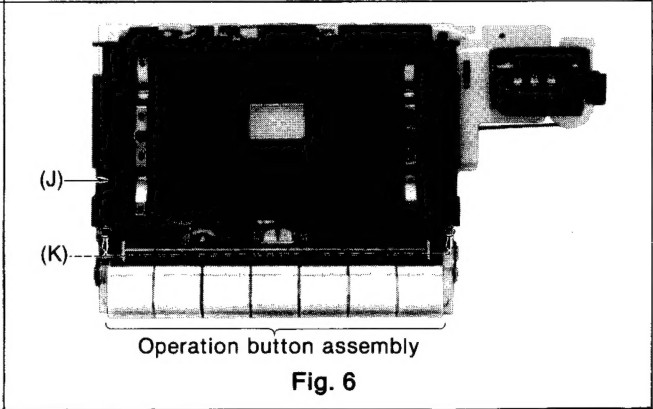
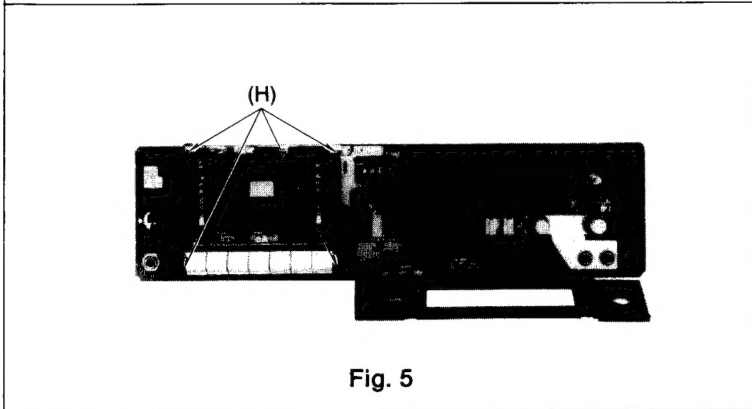
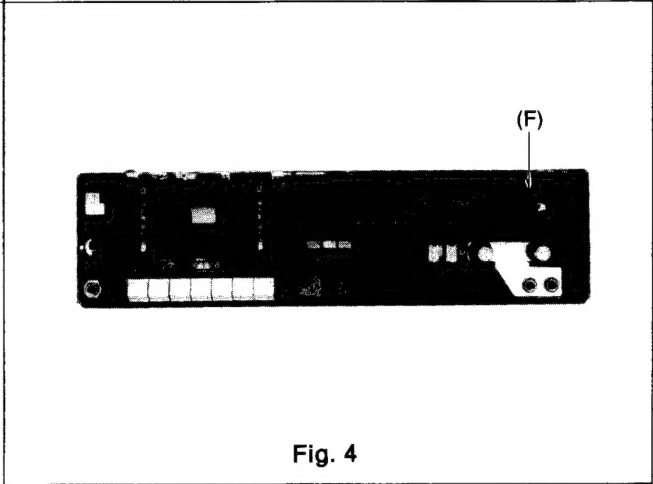
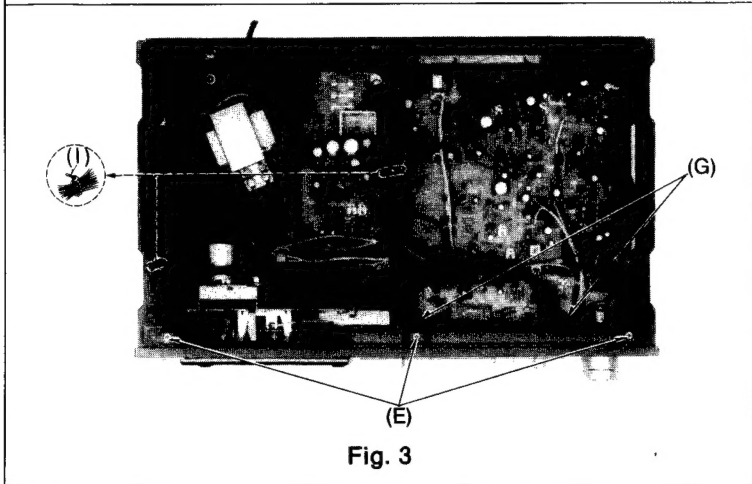
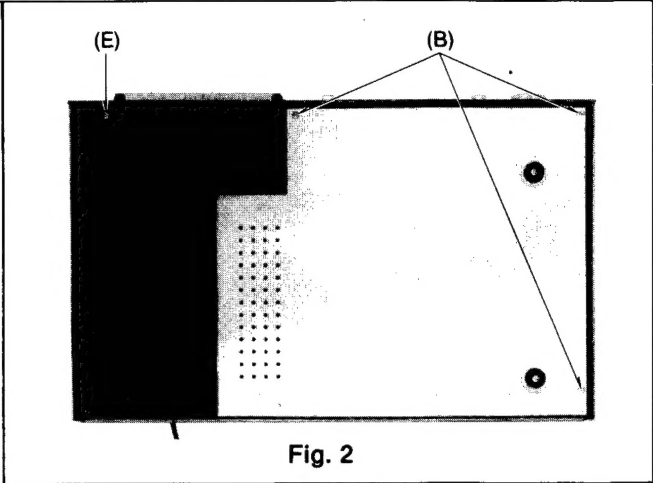
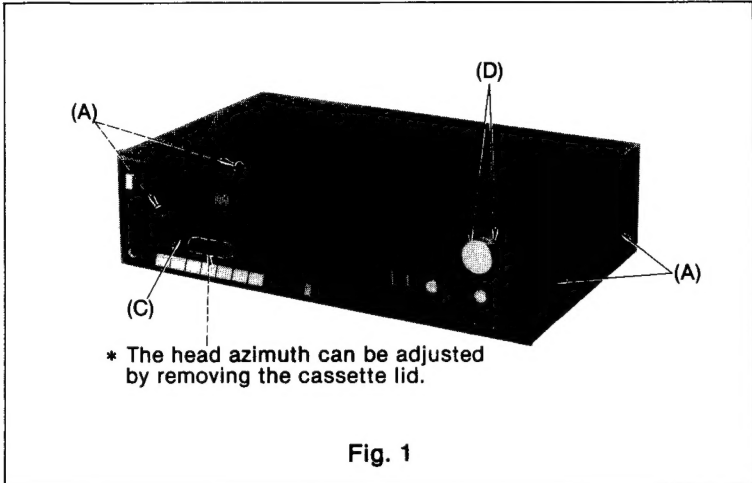
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LOCATION OF CONTROLS AND COMPONENTS



- ① Power switch [power (push on)]
- ② Cassette holder
- ③ Remaining tape display light
- ④ Tape counter and Reset button (tape counter)
- ⑤ FL (fluorescent level) meters
- ⑥ Input level controls (input level) (L → R)
- ⑦ Headphones jack (phones)
- ⑧ Eject button (▲ eject)
- ⑨ Record button (○ rec)
- ⑩ Rewind/Review button (◀◀ rew/rev)
- ⑪ Fast forward/Cue button (▶▶ ff/cue)
- ⑫ Play button (▶ play)
- ⑬ Stop button (■ stop)
- ⑭ Pause button (|| pause)
- ⑮ 3 head LED display (3 Head System)
- ⑯ Record-muting button (rec mute)
- ⑰ Auto tape select indicators [Auto Tape Select (Normal • CrO₂ • Metal)]
- ⑱ Monitor switch (monitor)
- ⑲ Dolby noise-reduction switch (Dolby NR)
- ⑳ Bias fine adjustment control [bias adjust]
- ㉑ Microphone jacks (L mic R)
- ㉒ Output level control (output level)
- ㉓ Line output jacks (LINE OUT) (R • L)
- ㉔ Line input jacks (LINE IN) (R • L)
- ㉕ Voltage selector (VOLTAGE SELECTOR)

DISASSEMBLY INSTRUCTIONS



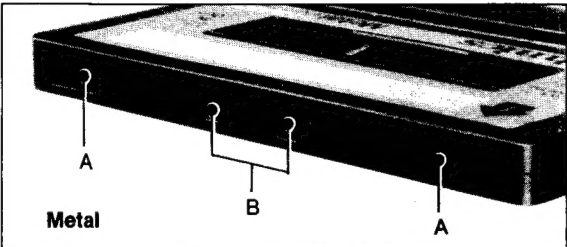
Ref. No.	Procedure	To remove ———	Remove ———	Shown in fig. ———
1	1	Case cover	• 4 screws (A)	1
2	2	Bottom cover	• 3 screws (B)	2
3	1→2→3	Front panel	• Cassette lid (C) • 2 control knobs (D) • 4 screws (E)	1 1 2, 3
4	1→2→3→4	FL meter circuit board	• FL meter cover (F) • 3 red screws (G)	4 2
5	1→2→3→5	Mechanism unit	• 4 red screws (H) • 2 binders (I)	5 3
6	1→2→3→5→6	Operation button assembly	• Cassette holder assembly (J) • 2 red screws (K)	6 6

TECHNICAL EXPLANATION OF AUTO TAPE SELECTOR

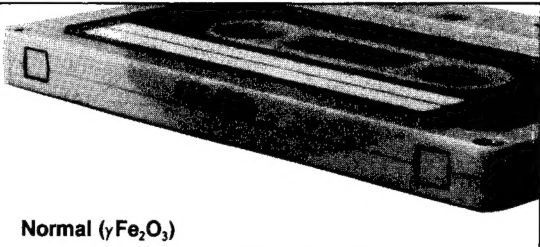
— AUTO TAPE SELECTOR —

This unit is equipped with an auto-tape selector system that detects these identification recesses and automatically selects the correct bias and equalization for Normal, CrO₂ and Metal tape varieties.

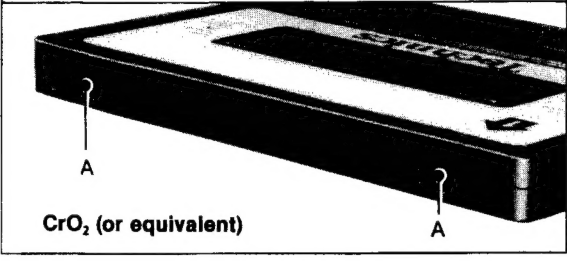
Thus, the novice user can obtain the correct tape selector setting automatically to ensure proper recording and playback results.



Metal



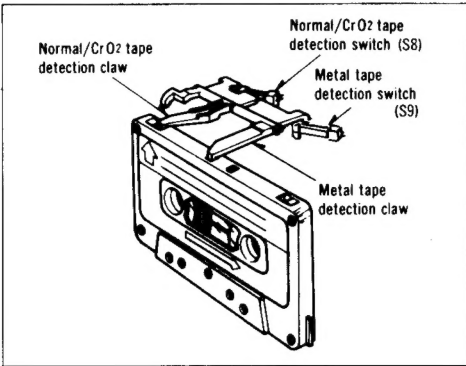
Normal ($\gamma\text{Fe}_2\text{O}_3$)



CrO₂ (or equivalent)

Type \ Recess	A	B
Type		
Metal	YES	YES
CrO ₂	YES	NO
Normal	NO	NO

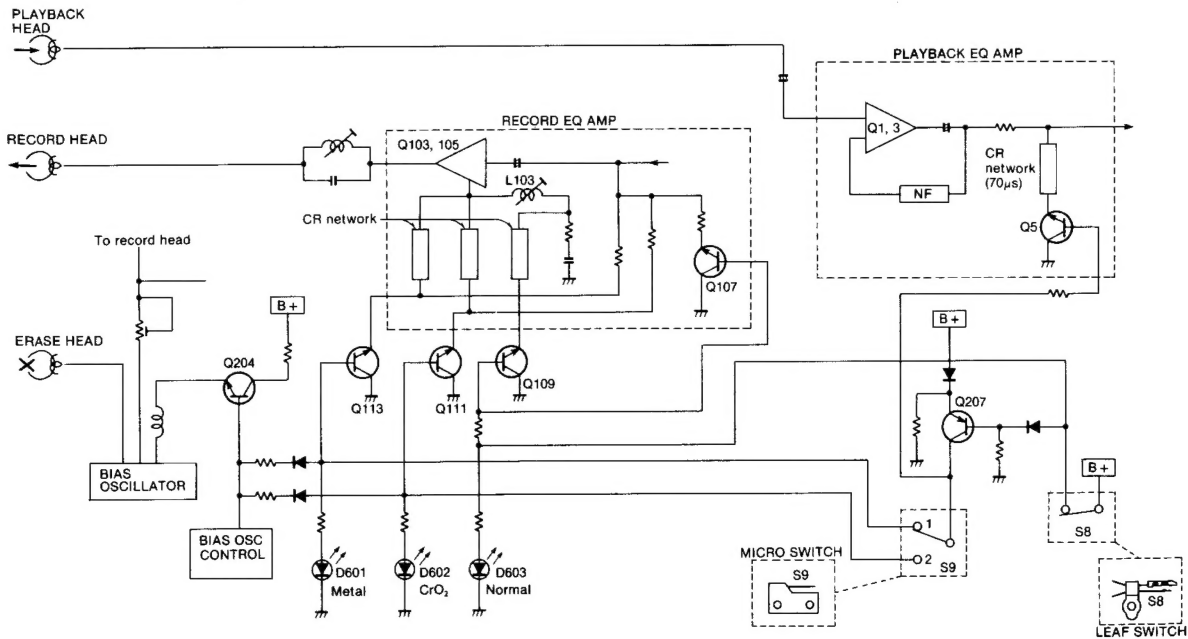
— MECHANICAL SECTION —



Normal/CrO₂ tape detection claw
Normal/CrO₂ tape detection switch (S8)
Metal tape detection switch (S9)
Metal tape detection claw

	S9	S8	Mode
			Normal tape mode
			CrO ₂ tape mode
			Metal tape mode

— ELECTRICAL SECTION —



MEASUREMENT AND ADJUSTMENT METHODS

ADJUSTMENT PARTS LOCATION

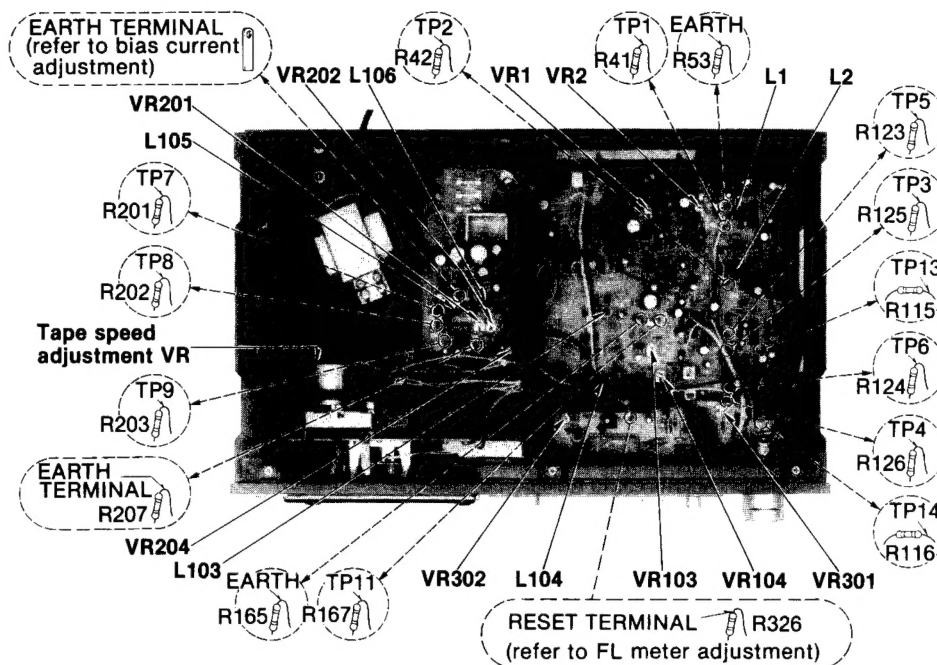
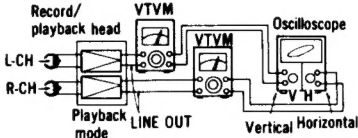

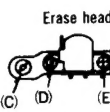
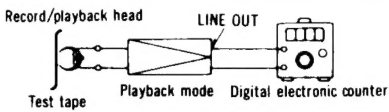
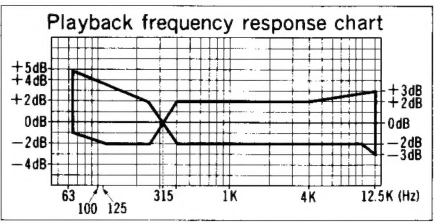
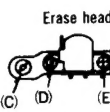
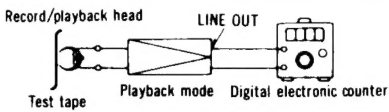
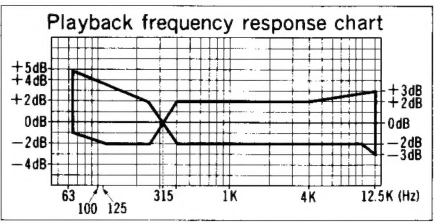
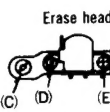
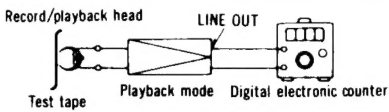
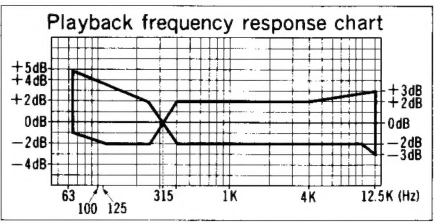


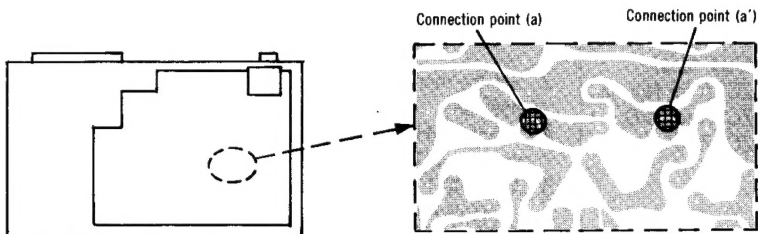
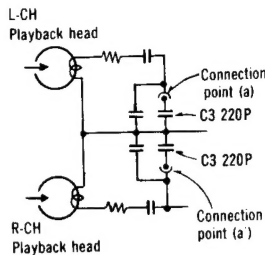
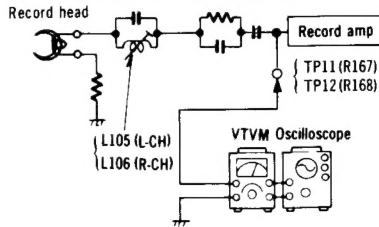
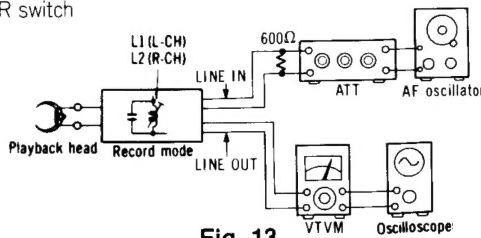
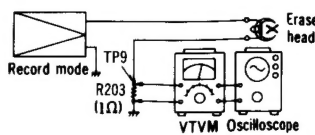
Fig. 1

NOTES: Set switches and controls in the following positions, unless specified otherwise.

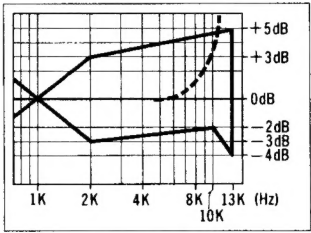
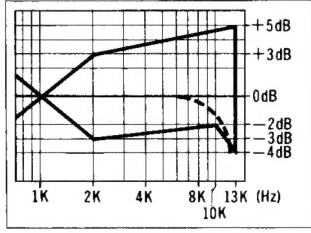
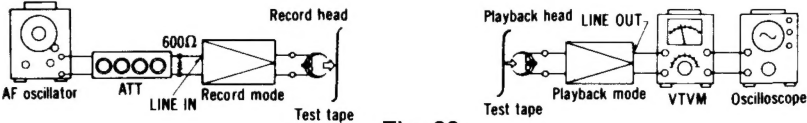
- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$).
- Bias fine adjust: Center.
- Monitor selector: Tape.
- Input level controls: Maximum.
- Output level control: Maximum.
- Dolby NR selector: Out.

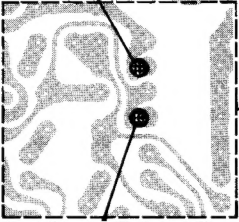
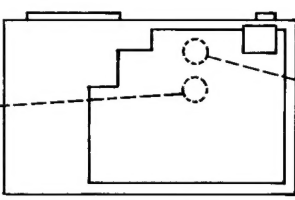
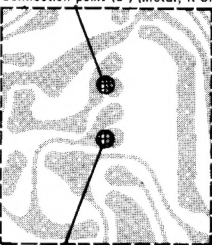
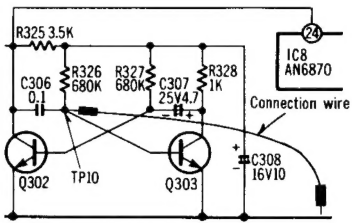



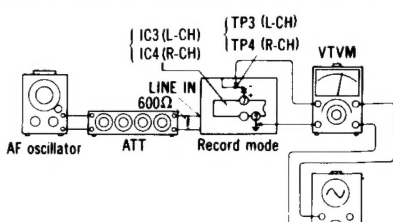
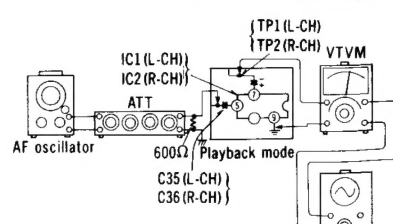
ITEM	MEASUREMENT & ADJUSTMENT
A Head position adjustment Condition: * Playback and pause mode	<p>(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.)</p> <ol style="list-style-type: none"> 1. Press the playback button and pause button. 2. Measure the space between the pressure roller and the capstan. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Standard value: $0.5 \pm 0.3\text{mm}$ </div> <ol style="list-style-type: none"> 3. If the measured value is not within the standard value, untighten screw (A), and slide the head adjusting plate in the direction of arrow (B) for adjustment (Fig. 2).
B Head azimuth adjustment Condition: * Playback mode Equipment: * VTVM * Oscilloscope * Test tape (azimuth) ... QZZCFM * Test tape (tape path viewer) ... QZZCRD	<p>Head azimuth adjustment</p> <p>L-CH/R-CH output balance adjustment</p> <ol style="list-style-type: none"> 1. Make connections as shown in fig. 3. 2. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 4 for maximum output L-CH and R-CH levels. When the output levels of L-CH and R-CH are not at maximum at the same time, readjust as follows. 3. Turn the screw shown in fig. 11 to find angles (A) and (C) (points where peak output levels for left and right channels are obtained). Then, locate the angle (B) between angles (A) and (C), i. e., a point where L-CH and R-CH output levels come together at maximum (Refer to figs. 4 and 5).

ITEM	MEASUREMENT & ADJUSTMENT						
	<div>L-CH/R-CH phase adjustment</div> <div><div><div><div><div>4. Make connections as shown in fig. 6</div><div>5. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 4 so that pointers of the two VTVMs swing to maximum and a waveform as illustrated in fig. 7 is obtained on the oscilloscope.</div><div>6. After adjustment, lock head adjust screw with lacquer.</div></div></div><div><div></div><div></div><div>Fig. 5</div><div>Fig. 6</div><div>Fig. 7</div></div></div><tr><td><div>● Erase head height adjustment</div><div>Condition:<ul style="list-style-type: none">• Playback mode</div><div>Equipment:<ul style="list-style-type: none">• Test tape (tape path viewer) ... QZZCRD</div></td><td><div>Caution:</div><div><div><div><div>1. Remove screws (D) and (E) to replace the erase head. (Do not remove nut (C) since it is designed for erase head height. Adjustment to maintain performance.)</div><div>2. After erase head replacement, check by playing test tape (QZZCRD) back to see that the tape travels properly.</div><div>3. For any tape travel performance problem, follow the procedure below for adjustment.</div></div></div><div></div><div>Fig. 8</div></div><div>Adjustment</div><div><div><div>1. Adjust nut (C) shown in fig. 8 so that the tape may not get curled or malformed by tape guide of the erase head.</div><div>2. After adjustment, lock nut (C) with lacquer.</div></div></div></td></tr><tr><td><div>Ⓛ Tape speed</div><div>Condition:<ul style="list-style-type: none">• Playback mode</div><div>Equipment:<ul style="list-style-type: none">• Digital electronic counter or frequency counter• Test tape ... QZZCWAT</div></td><td><div>Tape speed accuracy</div><div><div><div><div>1. Test equipment connection is shown in fig. 9.</div><div>2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter.</div><div>3. Measure this frequency.</div><div>4. On the basis of 3,000Hz, determine value by following formula: $\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 (\%)$ where, f = measured value</div><div>5. Take measurement at middle section of tape.</div></div></div><div></div><div>Fig. 9</div><div>Standard value: ±1.5%</div></div><div>Adjustment method</div><div><div><div>1. Playback the test tape (middle).</div><div>2. Adjust so that frequency becomes 3,000Hz.</div><div>3. Tape speed adjustment VR shown in fig. 1.</div></div></div><div>Note: Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.</div><div>Tape speed fluctuation</div><div>Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows: $\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100 (\%)$ f₁ = maximum value, f₂ = minimum value</div><div>Standard value: Less than 1%</div></td></tr><tr><td><div>Ⓔ Playback frequency response</div><div>Condition:<ul style="list-style-type: none">• Playback mode• Normal tape mode• Output level control ... MAX</div><div>Equipment:<ul style="list-style-type: none">• VTVM • Oscilloscope• Test tape ... QZZCFM</div></td><td><div>Measurement</div><div><div><div><div>1. Test equipment connection is shown in fig. 3.</div><div>2. Place UNIT into playback mode.</div><div>3. Playback the frequency response test tape (QZZCFM).</div><div>4. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz and compare each output level with the standard frequency 315Hz, at LINE OUT.</div><div>5. Make measurement for both channels.</div><div>6. Make sure that the measured value is within the range specified in the frequency response chart (fig. 10).</div></div></div><div></div><div>Fig. 10</div></div></td></tr></div>	<div>● Erase head height adjustment</div> <div>Condition:<ul style="list-style-type: none">• Playback mode</div> <div>Equipment:<ul style="list-style-type: none">• Test tape (tape path viewer) ... QZZCRD</div>	<div>Caution:</div> <div><div><div><div>1. Remove screws (D) and (E) to replace the erase head. (Do not remove nut (C) since it is designed for erase head height. Adjustment to maintain performance.)</div><div>2. 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Playback the frequency response test tape (QZZCFM).</div><div>4. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz and compare each output level with the standard frequency 315Hz, at LINE OUT.</div><div>5. Make measurement for both channels.</div><div>6. Make sure that the measured value is within the range specified in the frequency response chart (fig. 10).</div></div></div><div></div><div>Fig. 10</div></div>
<div>● Erase head height adjustment</div> <div>Condition:<ul style="list-style-type: none">• Playback mode</div> <div>Equipment:<ul style="list-style-type: none">• Test tape (tape path viewer) ... QZZCRD</div>	<div>Caution:</div> <div><div><div><div>1. Remove screws (D) and (E) to replace the erase head. (Do not remove nut (C) since it is designed for erase head height. Adjustment to maintain performance.)</div><div>2. After erase head replacement, check by playing test tape (QZZCRD) back to see that the tape travels properly.</div><div>3. For any tape travel performance problem, follow the procedure below for adjustment.</div></div></div><div></div><div>Fig. 8</div></div> <div>Adjustment</div> <div><div><div>1. Adjust nut (C) shown in fig. 8 so that the tape may not get curled or malformed by tape guide of the erase head.</div><div>2. After adjustment, lock nut (C) with lacquer.</div></div></div>						
<div>Ⓛ Tape speed</div> <div>Condition:<ul style="list-style-type: none">• Playback mode</div> <div>Equipment:<ul style="list-style-type: none">• Digital electronic counter or frequency counter• Test tape ... QZZCWAT</div>	<div>Tape speed accuracy</div> <div><div><div><div>1. Test equipment connection is shown in fig. 9.</div><div>2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter.</div><div>3. Measure this frequency.</div><div>4. On the basis of 3,000Hz, determine value by following formula: $\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 (\%)$ where, f = measured value</div><div>5. Take measurement at middle section of tape.</div></div></div><div></div><div>Fig. 9</div><div>Standard value: ±1.5%</div></div> <div>Adjustment method</div> <div><div><div>1. Playback the test tape (middle).</div><div>2. Adjust so that frequency becomes 3,000Hz.</div><div>3. Tape speed adjustment VR shown in fig. 1.</div></div></div> <div>Note: Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.</div> <div>Tape speed fluctuation</div> <div>Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows: $\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100 (\%)$ f₁ = maximum value, f₂ = minimum value</div> <div>Standard value: Less than 1%</div>						
<div>Ⓔ Playback frequency response</div> <div>Condition:<ul style="list-style-type: none">• Playback mode• Normal tape mode• Output level control ... MAX</div> <div>Equipment:<ul style="list-style-type: none">• VTVM • Oscilloscope• Test tape ... QZZCFM</div>	<div>Measurement</div> <div><div><div><div>1. Test equipment connection is shown in fig. 3.</div><div>2. Place UNIT into playback mode.</div><div>3. Playback the frequency response test tape (QZZCFM).</div><div>4. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz and compare each output level with the standard frequency 315Hz, at LINE OUT.</div><div>5. Make measurement for both channels.</div><div>6. Make sure that the measured value is within the range specified in the frequency response chart (fig. 10).</div></div></div><div></div><div>Fig. 10</div></div>						

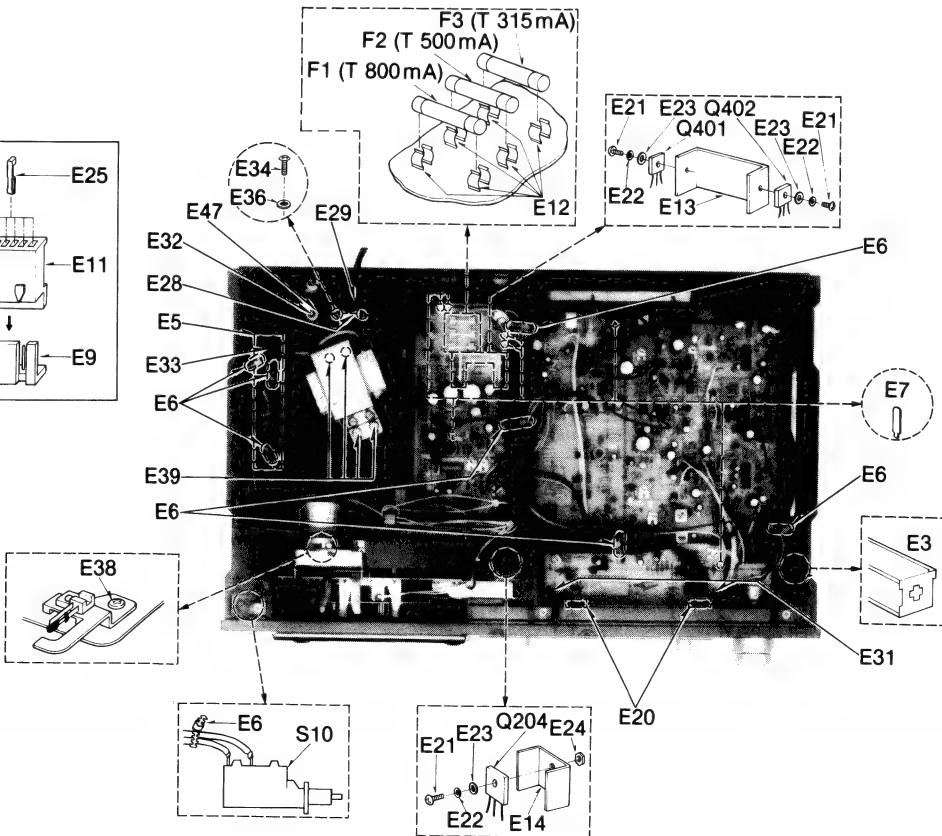
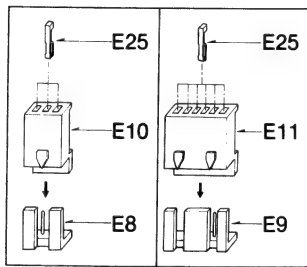
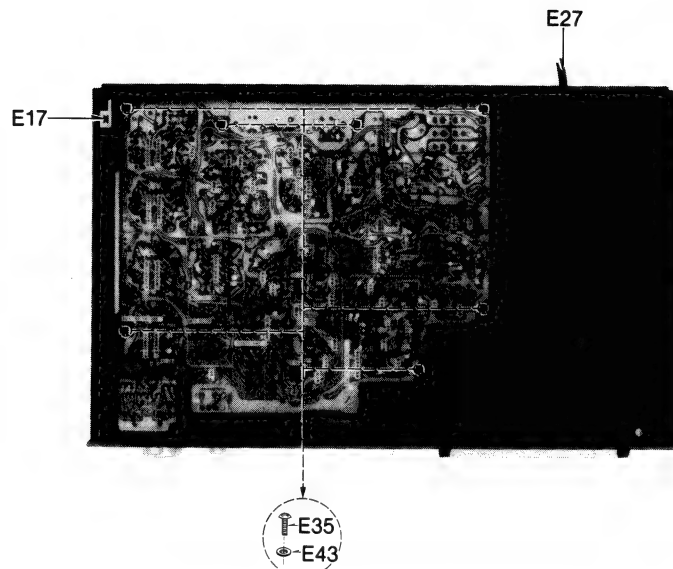
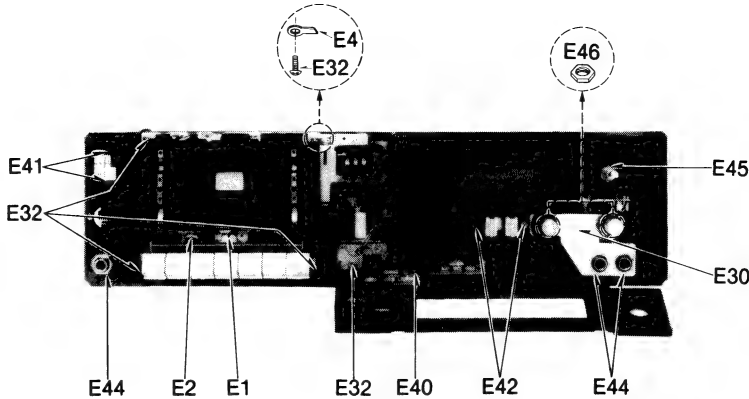
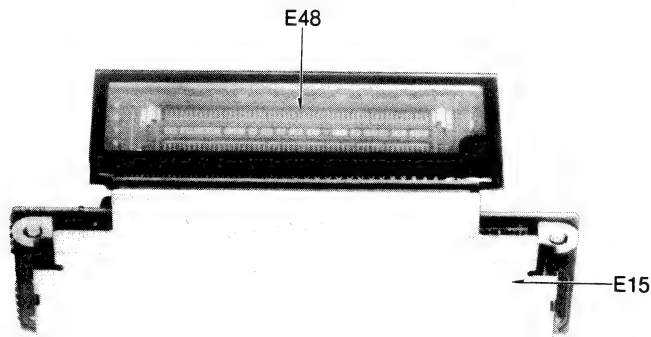
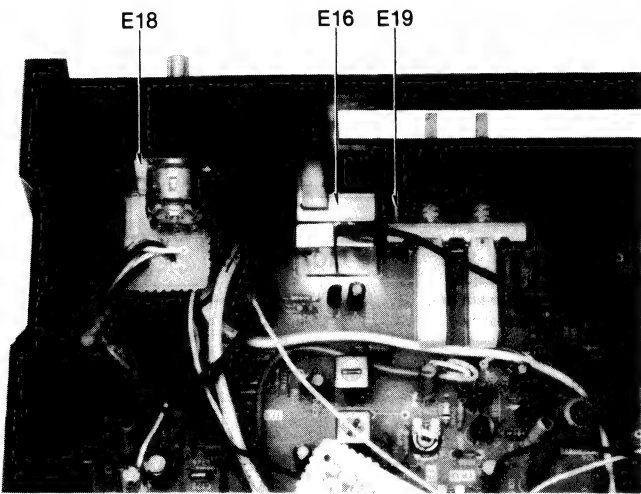
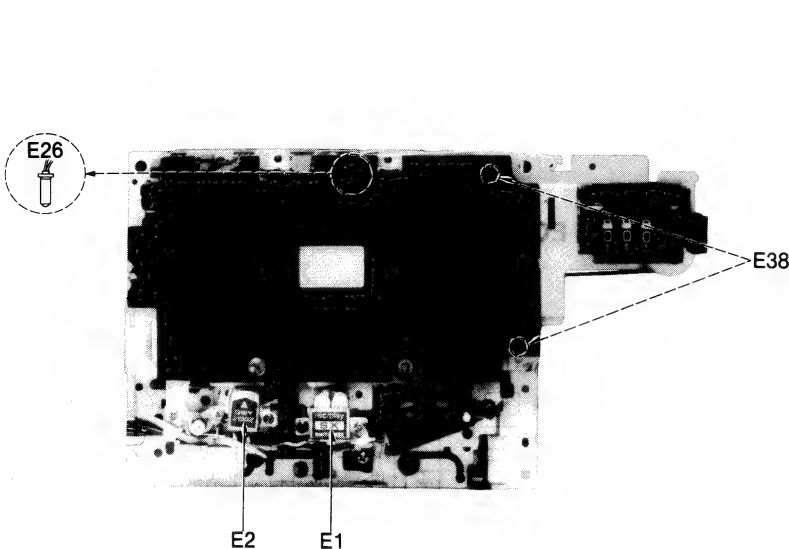
ITEM	MEASUREMENT & ADJUSTMENT										
	<p>Playback frequency response adjustment</p> <p>1. Open or short the circuit's connection points to adjust playback frequency response (see fig. 11).</p> <p>2. When connection points (a) (L-CH) and (a') (R-CH) are shorted, the frequency response changes by values as described below (table 1).</p> <p>Short/open conditions, in turn, differ with sets due to the differences in fine adjustments made prior to shipping. If readjustments are required, set conditions so that results are as close to the standard value as possible.</p> <table><tr><th>Connection point (a) (L-CH), (a') (R-CH)</th><th>1 kHz</th><th>4 kHz</th><th>8 kHz</th><th>12.5 kHz</th></tr><tr><td>Short</td><td>0 dB</td><td>around +0.1 dB</td><td>around +0.6 dB</td><td>around +0.8 dB</td></tr></table> <p style="text-align: center;">Table 1</p> <div><p style="text-align: center;">Fig. 11</p></div> <div></div>	Connection point (a) (L-CH), (a') (R-CH)	1 kHz	4 kHz	8 kHz	12.5 kHz	Short	0 dB	around +0.1 dB	around +0.6 dB	around +0.8 dB
Connection point (a) (L-CH), (a') (R-CH)	1 kHz	4 kHz	8 kHz	12.5 kHz							
Short	0 dB	around +0.1 dB	around +0.6 dB	around +0.8 dB							
<p>Ⓕ Playback gain</p> <p>Condition:</p> <ul style="list-style-type: none">• Playback mode• Normal tape mode• Output level control ... MAX <p>Equipment:</p> <ul style="list-style-type: none">• VTVM• Oscilloscope• Test tape ... QZZCFM	<p>1. Test equipment connection is shown in fig. 3.</p> <p>2. Playback standard recording level portion on test tape (QZZCFM 315 Hz) and, using VTVM, measure the output level at LINE OUT jack.</p> <p>3. Make measurement for both channels.</p> <div><p style="text-align: center;">Standard value: around 0.7V</p></div> <p>Adjustment</p> <p>1. If measured value is not standard, adjust VR1 (L-CH), VR2 (R-CH) (See fig. 1).</p> <p>2. After adjustment, check "Playback frequency response" again.</p>										
<p>Ⓖ Bias leakage</p> <p>Condition:</p> <ul style="list-style-type: none">• Record mode• Input level controls ... MAX• Output level control ... MAX• Metal tape mode <p>Equipment:</p> <ul style="list-style-type: none">• VTVM• Oscilloscope• AF oscillator	<p>Adjustment (For record amp)</p> <p>1. Test equipment connection is shown in fig. 12.</p> <p>2. Place UNIT into record mode.</p> <p>3. Adjust trap coils L105 (L-CH), L106 (R-CH), so that measured value becomes minimum.</p> <p style="text-align: center;">Fig. 12</p> <div></div> <p>Adjustment (For playback amp)</p> <p>1. Test equipment connection is shown in fig. 13.</p> <p>2. Turn the UNIT into record mode, set the monitor selector to tape position and set the Dolby NR switch to IN position.</p> <p>3. Supply 1 kHz (−20 dB) signal from AF oscillator through ATT to LINE IN.</p> <p>4. Adjust trap coils L1 (L-CH) and L2 (R-CH), so that measured values are minimized at LINE OUT.</p> <p style="text-align: center;">Fig. 13</p> <div></div>										
<p>Ⓗ Erase current</p> <p>Condition:</p> <ul style="list-style-type: none">• Record mode• Metal tape mode <p>Equipment:</p> <ul style="list-style-type: none">• VTVM• Oscilloscope	<p>1. Test equipment connection is shown in fig. 14.</p> <p>2. Place UNIT into record mode and tape selector to metal position and then measure voltage at test point 9.</p> <p>3. Determine erase current with the following formula:</p> $\text{Erase current (A)} = \frac{\text{Voltage across both ends of R203}}{1 (\Omega)}$ <p style="text-align: center;">Fig. 14</p> <div></div>										

ITEM	MEASUREMENT & ADJUSTMENT
	<div data-bbox="428 267 859 322" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Standard value: $100 \pm_{-5}^{+20}$ mA (Metal) </div> <p>4. If measured value is not within standard adjust VR204.</p>
<p>① Overall frequency response</p> <p>Condition:</p> <ul style="list-style-type: none"> • Record/playback mode • Normal tape mode • CrO₂ tape mode • Metal tape mode • Input level controls ... MAX • Output level control ... MAX <p>Equipment:</p> <ul style="list-style-type: none"> • VTVM • AF oscillator • ATT • Resistor (600Ω) • Test tape (reference blank tape) <ul style="list-style-type: none"> ... QZZCRA for Normal ... QZZCRX for CrO₂ ... QZZCRZ for Metal 	<p>Note:</p> <p>Before measuring and adjusting, make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).</p> <p>Adjustment at middle and high frequency range: Using bias current</p> <ol style="list-style-type: none"> 1. Test equipment connection is shown in fig. 15. 2. Load reference blank test tape. 3. Set the monitor selector to "source" position. 4. Supply 1kHz signal from AF oscillator through ATT to LINE IN. 5. Adjust ATT so that input level is -20 dB below standard recording level (standard recording level=0 VU). 6. At this time, LINE OUT level indicates 0.07 V. 7. Change the monitor selector to "tape" position. 8. Press the record and playback buttons. 9. Switch AF oscillator setting to 1kHz, 50 Hz, 200Hz, 4 kHz, 8 kHz and 13 kHz and read LINE OUT output levels. 10. Make sure that level of each frequency is within the specification described in fig. 16 based on a reference of 1 kHz. <div data-bbox="823 404 1339 729"> </div> <p style="text-align: center;">Fig. 15</p> <div data-bbox="843 802 1321 1017"> </div> <p style="text-align: center;">Fig. 16</p> <div data-bbox="420 1232 582 1258"> <p>Adjustment ①:</p> </div> <p>When the curve exceeds the overall frequency response chart specifications (fig. 16) as shown in fig. 17.</p> <div data-bbox="482 1382 785 1610"> </div> <p style="text-align: center;">Fig. 17</p> <ol style="list-style-type: none"> 1) Increase bias current by turning VR201 (L-CH) and VR202 (R-CH). (See fig. 1 on page 4.) 2) Repeat steps 8 and 10 to confirm. (Proceed to steps 11, 12, 13 and 14 if the curve is now within the charted specifications in fig. 16.) 3) If the curve still exceeds the specifications (fig. 16), increase bias current further and repeat steps 8, 9 and 10. <div data-bbox="910 1232 1071 1258"> <p>Adjustment ②:</p> </div> <p>When the curve falls below the overall frequency response chart specifications (fig. 16) as shown in fig. 18.</p> <div data-bbox="962 1382 1265 1610"> </div> <p style="text-align: center;">Fig. 18</p> <ol style="list-style-type: none"> 1) Reduce bias current by turning VR201 (L-CH) and VR202 (R-CH). 2) Repeat steps 8 and 10 to confirm. (Proceed to steps 11, 12, 13 and 14 if the curve is now within the charted specifications in fig. 16.) 3) If the curve still falls below the charted specifications (fig. 16), reduce bias current further and repeat steps 8, 9 and 10.

ITEM	MEASUREMENT & ADJUSTMENT				
	<ol style="list-style-type: none"> Place UNIT into CrO₂ tape mode. Change test tape to QZZCRX, and record 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz and 16kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for CrO₂ tapes (fig. 19). Place UNIT into metal tape mode change test tape to QZZCRZ, and record 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz, 12.5kHz and 15kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 19). Confirm that bias currents are approximately as follows when the UNIT is set at different tape mode. <ul style="list-style-type: none"> Read voltage on VTVM and calculate bias current by following formula: $\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10 (\Omega)}$ <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Standard value:</p> <table border="0"> <tr> <td>around 0.7mA (Normal position)</td> <td rowspan="3">} : measured at TP7 (L-CH) and TP8 (R-CH)</td> </tr> <tr> <td>around 1.0mA (CrO₂ position)</td> </tr> <tr> <td>around 1.6mA (Metal position)</td> </tr> </table> </div> <p>Adjustment at high frequency range: Using the peaking coil for recording equalization</p> <p>When the frequency response is flat in the middle frequency range and makes a sharp rise or drop in the high frequency range, as shown in fig. 20 and fig. 21, adjust by turning the following peaking coils L103 (L-CH), L104 (R-CH).</p> <div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <p>Fig. 20</p> <p>Fig. 21</p> </div>	around 0.7mA (Normal position)	} : measured at TP7 (L-CH) and TP8 (R-CH)	around 1.0mA (CrO ₂ position)	around 1.6mA (Metal position)
around 0.7mA (Normal position)	} : measured at TP7 (L-CH) and TP8 (R-CH)				
around 1.0mA (CrO ₂ position)					
around 1.6mA (Metal position)					
<p>Overall gain</p> <p>Condition:</p> <ul style="list-style-type: none"> Record/playback mode Normal tape mode CrO₂ tape mode Metal tape mode Input level controls ... MAX Output level control ... MAX Standard input level: <ul style="list-style-type: none"> MIC ... -72 ± 3dB LINE IN ... -24 ± 3dB <p>Equipment:</p> <ul style="list-style-type: none"> VTVM AF oscillator ATT Oscilloscope Test tape (reference blank tape) <ul style="list-style-type: none"> ... QZZCRA for Normal ... QZZCRY for CrO₂ ... QZZCRZ for Metal 	<ol style="list-style-type: none"> Test equipment connection is shown in fig. 22. Place the test tape (QZZCRA) in the cassette holder. Place UNIT into record mode and normal tape mode. <div style="text-align: center;">  <p>Fig. 22</p> </div> <ol style="list-style-type: none"> Supply 1 kHz signal (-24 dB) from AF oscillator, through ATT to LINE IN. Adjust ATT until source monitor level at LINE OUT becomes 0.7V. Using test tape, make recording. Playback recorded tape, and measure the tape monitor output level at LINE OUT on VTVM. <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Standard value: around 0.7V(Normal)</p> </div> <ol style="list-style-type: none"> If measured value is not within standard, adjust VR103 (L-CH), VR104 (R-CH). Repeat from step (4). Place UNIT into each tape mode. Change test tape to CrO₂ (QZZCRX) and Metal (QZZCRZ). Place UNIT into record mode. Playback recorded tape, and measure the output level at LINE OUT on VTVM. <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Standard value: around 0.7V(CrO₂ and Metal)</p> </div>				

ITEM	MEASUREMENT & ADJUSTMENT
	<p>Overall gain adjustment with metal and CrO₂ tapes</p> <ol style="list-style-type: none">Overall gain adjustment with metal and CrO₂ tapes must be done after setting overall gain with normal tape.Overall gain adjustment with metal and CrO₂ tapes is done by opening and shorting connection points for overall gain adjustment on the printed circuit board (fig. 23). Overall gain is reduced by approximately 0.8 dB (CrO₂)/1.2 dB (Metal) when shorted connection points are opened. Open/short condition at connection points differ with set due to the differences in fine adjustments made prior to shipping. If readjustments are required, set conditions so that results are as close to the standard value as possible. <div><div><p>Connection point (C) (Metal, L-CH)</p><p>Connection point (B) (CrO₂, L-CH)</p></div><div></div><div><p>Connection point (C') (Metal, R-CH)</p><p>Connection point (B') (CrO₂, R-CH)</p></div></div> <p>Fig. 23</p>
<p>K Fluorescent meter</p> <p>Condition:</p> <ul style="list-style-type: none">• Record mode• Input level controls ... MAX• Output level control ... MAX• Tape selector ... Normal position <p>Equipment:</p> <ul style="list-style-type: none">• VTVM• AF oscillator• ATT	<ol style="list-style-type: none">Test equipment connection is shown in fig. 22.As shown in fig. 24, connecting the base of Q303 and ground stops the oscillation of the a stable multivibrator comprising Q302 and Q303.Supply 1 kHz signal (−24 dB) to the LINE IN jack, then press the record button.Adjust the ATT so that the output level at LINE OUT jack becomes 0.7 V (The input level at this condition is termed the standard input level).Adjustment at “−20 dB”:<ol style="list-style-type: none">Adjust the ATT so that input level is −20 dB below standard recording level.Adjust VR301 so that the −20 dB segment lights up in the -20 ± 0.8 dB range (L-CH ONLY) (See fig. 25).Adjustment at “0 dB”:<ol style="list-style-type: none">Adjust the ATT so that the output level at LINE OUT jack becomes 0.7 V. (The input level at this condition is termed the standard input level.)Adjust VR302 so that the +1 dB segment lights up in the 0 ± 0.2 dB range of the standard input level (See fig. 26).Repeat twice between steps (5) and (6) above.Adjust ATT and check that all segments light up when an input signal level is increased to 10 dB higher than the standard input level (See fig. 27). <div></div> <p>Fig. 24</p> <div><p>Fig. 25</p><p>Fig. 26</p><p>Fig. 27</p></div>
<p>L Dolby NR circuit</p> <p>Condition:</p> <ul style="list-style-type: none">• Record mode• Input level controls ... MAX• Output level control ... MAX <p>Equipment:</p> <ul style="list-style-type: none">• VTVM• AF oscillator• ATT• Oscilloscope• Resistor (600Ω)	<p>Record side</p> <ol style="list-style-type: none">Test equipment connection is shown in fig. 28.Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain −34.5 dB at TP3 (L-CH), TP4 (R-CH) (frequency 5 kHz).Confirm that the value at IN position is $8 (\pm 2.5)$ dB greater than the value at OUT position of Dolby NR switch. <p>Playback side</p> <ol style="list-style-type: none">Test equipment connection is shown in fig. 29.Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain −34.5 dB at TP1 (L-CH), TP2 (R-CH) (frequency 5 kHz).Confirm that the value at IN position is $8 (\pm 2.5)$ dB less than the value at OUT position of Dolby NR switch. <div><p>Fig. 28</p><p>Fig. 29</p></div>

ELECTRICAL PARTS LOCATION

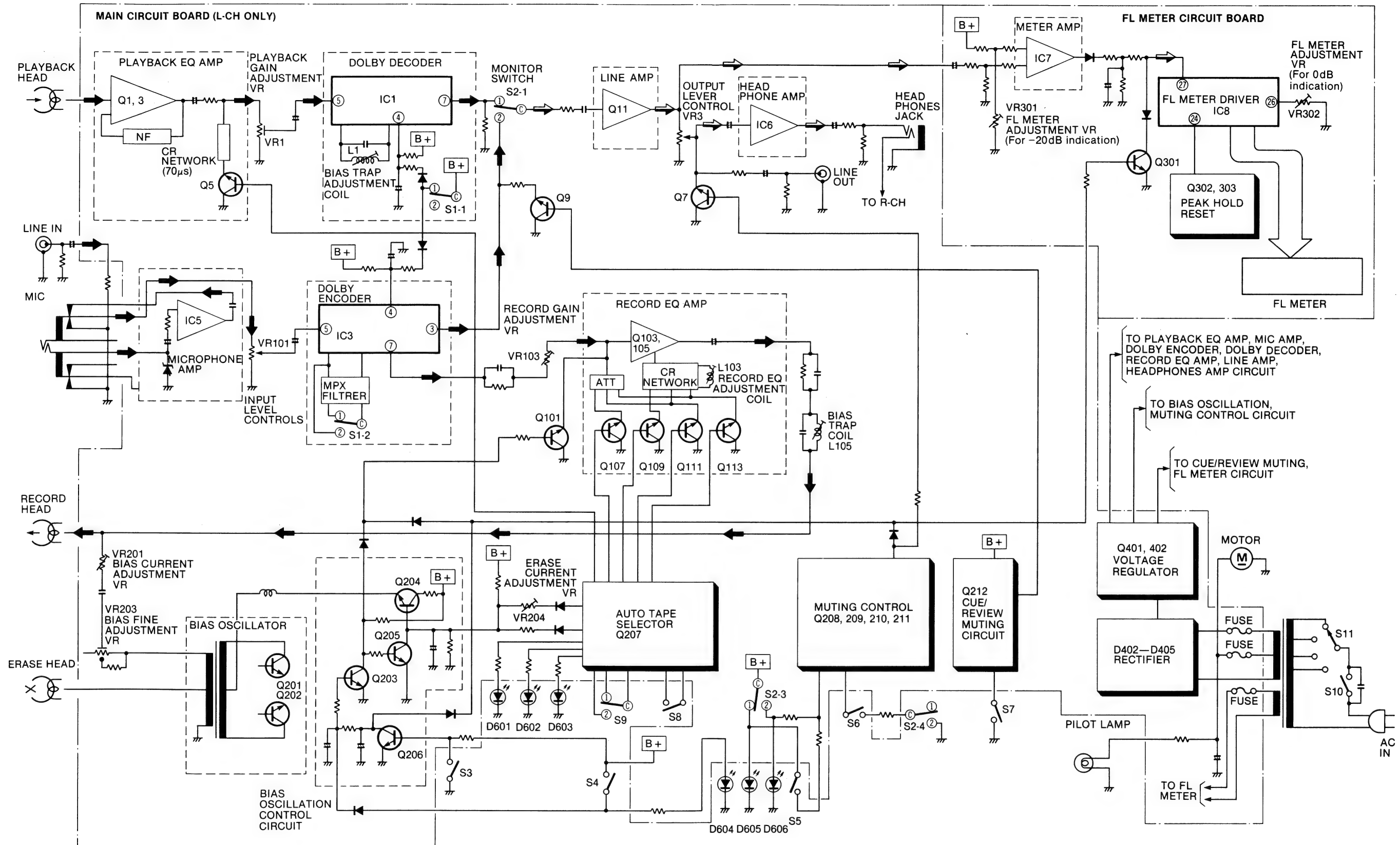


REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.	Part Name & Description
ELECTRICAL PARTS		
E 1	QWY4125Z	Head (Record/playback combination)
E 2	QWY2133Z	Head (Erase)
E 3	QTSM0035	Earth Plate (2)
E 4	QJT0015	Lug Terminal
E 5	QJT4017	4 Pin Terminal Plate
E 6	QTD1181	Wire Clamper
E 7	QJT1067	Check Pin
E 8	QJP1921TN	3 Pin Post
E 9	QJP1922TN	6 Pin Post
E 10	QJS1921TN	3 Pin Socket
E 11	QJS1922TN	6 Pin Socket
E 12	Δ QTF1054	Fuse Holder
E 13	QTHM0009	Heat Sink
E 14	QTHM0010	Heat Sink
E 15	QTSM0040	Shield Plate
E 16	QTSM0051	Shield Plate (3)
E 17	QTSM0062	Earth Plate (1)
E 18	QTSM0021	Shield Plate (3)
E 19	QMP1825	Shaft
E 21	XSN3 + 8S	Screw
E 22	XWA3B	Washer
E 23	XWG3	Washer
E 24	XNG3ES	Nut
E 25	QJT1054	Contact
E 26	XAMQ41S500	Pilot Lamp
E 27	[D] Δ SJA88	AC Power Cord
[For all European areas except United Kingdom.]		
[B] Δ QFC1205M		
[For United Kingdom.]		
E 28	QTD1164	Cord Clamper
E 29	QBJ1425	Cord Bushing
E 30	QTSM0066	Shield Plate
E 31	XTN3 + 8B	Tapping Screw
E 32	XTB3 + 10B	Tapping Screw
E 33	XTN3 + 12B	Tapping Screw
E 34	XTN3 + 16B	Tapping Screw
E 35	XTN3 + 10B	Tapping Screw
E 36	XWG3	Washer
E 38	XTN26 + 6B	Tapping Screw
E 39	XTN4 + 10B	Tapping Screw
E 40	XTN26 + 8B	Tapping Screw
E 41	XSN3 + 8S	Screw
E 42	XSN3 + 6S	Screw
E 43	XWA3B	Washer
E 44	QNQ1070	Nut
E 45	XNS9	Nut
E 46	XNS8	Nut
E 48	QSiFL005F	FL Meter

BLOCK DIAGRAM



NOTES:

- S1Dolby SW (OUT position).
- S2Monitor SW (Tape position: 1...Tape, 2...Source).
- S3Rec mute SW (OFF position).
- S4Record SW (OFF position).
- S5Muting SW (Mecha)
- S6Pause SW (OFF position)

- S7FF/REW SW.
- S8Auto tape select (ON normal).
- S9Auto tape select (1...Metal, 2...CrO₂).
- S10.....Power SW.
- S11.....Voltage select SW

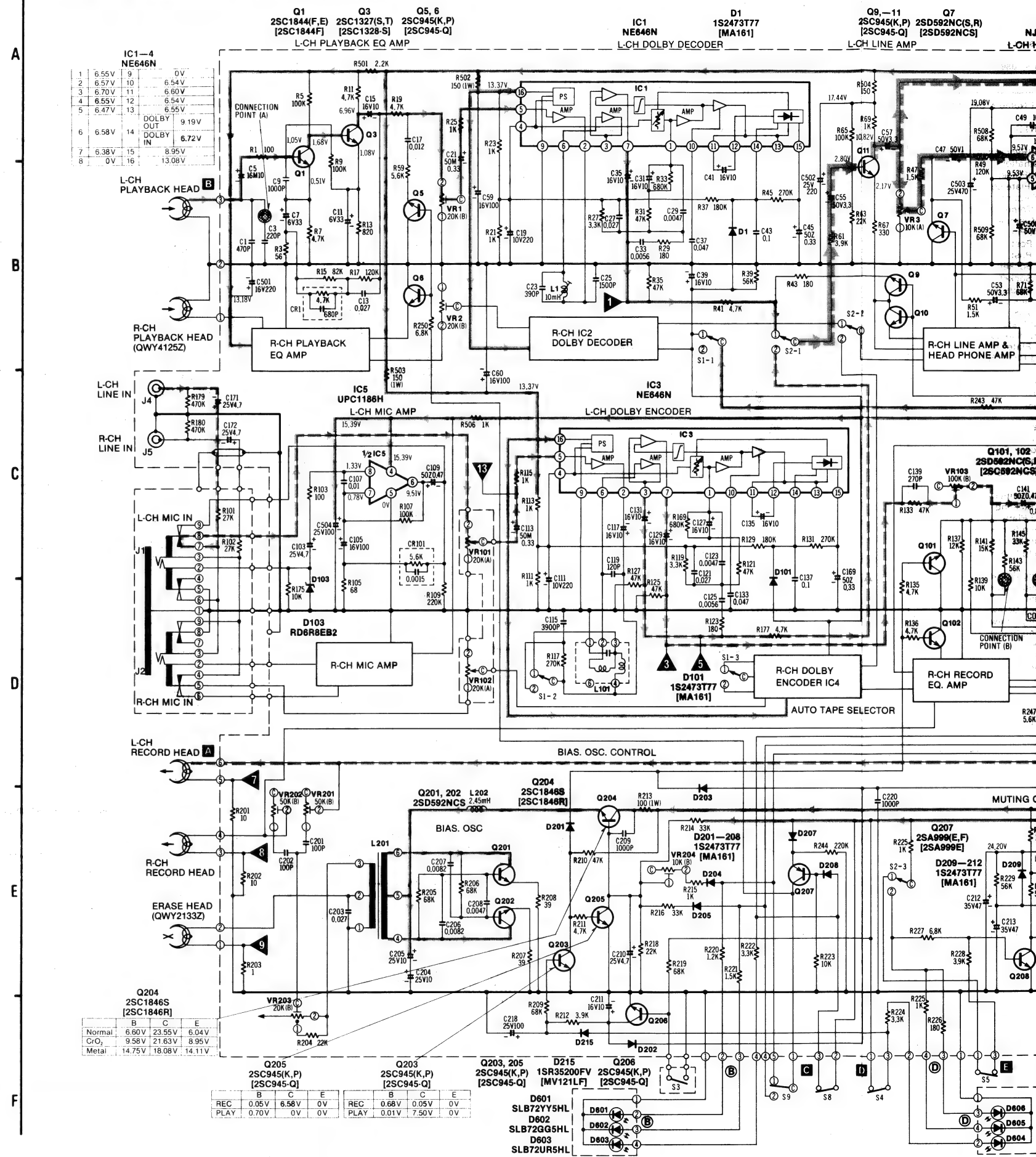
(→) this arrow indicates the flow of the playback signal.
 (→) this arrow indicates the flow of the recording signal.

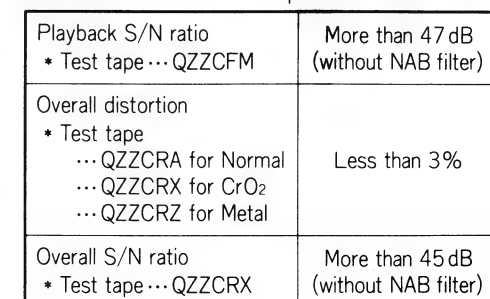
REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.	Ref No.	Part No.	Ref No.	Part No.	Ref No.	Part No.
RESISTORS				CAPACITORS			
R 1, 2	ERD25FJ101	R 207, 208	ERD25FJ390	C 1, 2	ECKD1H471KB	C 306	ECQV05104JZ
R 3, 4	ERD25FJ560	R 209	ERD25FJ683	C 3, 4	ECCD1H221K	C 307	ECEA25Z4R7
R 5, 6	ERD25FJ104	R 210, 211	ERD25FJ472	C 5, 6	ECEA16M10R	C 308	ECEA1HS100
R 7, 8	ERD25FJ472	R 212	ERD25FJ392	C 7, 8	ECEA1CS330		
R 9	ERD25FJ104	R 213	ERG1ANJ101	C 9, 10	ECKD1H102KB		
R 10	ERD25FJ104			C 11, 12	ECEA1CS330		
R 11, 12	ERD25FJ472	R 214	ERD25FJ333	C 13, 14	ECQV05273JZ		
R 13, 14	ERD25FJ821	R 215	ERD25FJ102	C 15, 16	ECEA1HS100		
R 15, 16	ERD25FJ823	R 216	ERD25FJ333	C 17, 18	ECQV05123JZ		
R 17, 18	ERD25FJ124	R 218	ERD25FJ223	C 19, 20	ECEA1AS221		
		R 219	ERD25FJ683				
		R 220	ERG12ANJ122				
		R 221	ERG12ANJ152				
		R 222	ERD25FJ332				
		R 223	ERD25FJ103				
		R 224	ERD25FJ332				
R 19, 20	ERD25FJ472			C 21, 22	ECEA50MR33R		
R 21, 22, 23, 24, 25, 26	ERD25FJ102	R 225	ERG12ANJ102	C 23, 24	ECCP1391JZ		
R 27, 28	ERD25FJ332	R 226	ERD25FJ181	C 25, 26	ECKD1H152KB		
R 29, 30	ERD25FJ181	R 227	ERD25FJ682	C 27, 28	ECQV05273JZ		
R 31, 32	ERD25FJ473	R 228	ERD25FJ392	C 29, 30	ECKD1H472JZ		
R 33, 34	ERD25FJ684	R 229	ERD25FJ563	C 31, 32	ECEA1HS100		
R 35, 36	ERD25FJ473	R 230	ERD25FJ562	C 33, 34	ECKD1H562JZ		
R 37, 38	ERD25FJ184	R 231	ERG14AJ101P	C 35, 36	ECEA1HS100		
R 39	ERD25FJ563	R 232	ERD25FJ100	C 37, 38	ECQV05473JZ		
R 41, 42	ERD25FJ472	R 233	ERD25FJ473	C 39, 41, 42	ECEA1HS100		
		R 234, 235	ERD25FJ102				
R 43, 44	ERD25FJ181			C 43, 44	ECQV05104JZ		
R 45, 46	ERD25FJ274	R 236	ERD25FJ823	C 45, 46	ECEA50Z3R3		
R 47, 48	ERD25FJ152	R 237	ERD25FJ561	C 47, 48	ECEA50Z1		
R 49, 50	ERD25FJ124	R 238	ERD25FJ681	C 49, 50	ECCD1H100KC		
R 51, 52	ERD25FJ152	R 239, 240	ERD25FJ103	C 51, 52	ECEA1ES101		
R 53, 54	ERD25FJ334	R 241	ERD25FJ562	C 53, 54, 55, 56, 57, 58	ECEA50Z3R3		
R 55, 56	ERD25FJ820	R 242	ERD25FJ222	C 59, 60	ECEA1ES101		
R 57, 58	ERD25FJ121	R 243	ERD25FJ473	C 103, 104	ECEA25Z4R7		
R 59, 60	ERD25FJ562	R 244	ERD25FJ224	C 105, 106	ECEA1ES101		
R 61, 62	ERD25FJ392	R 245	ERD25FJ102	C 107, 108	ECKD1H103MD		
		R 246	ERD25FJ822				
R 63, 64	ERD25FJ223			C 109, 110	ECEA50Z4R7		
R 65, 66	ERD25FJ104	R 247	ERD25FJ562	C 111, 112	ECEA1AS221		
R 67, 68	ERD25FJ331	R 248, 249, 250	ERD25FJ682	C 113, 114	ECEA50MR33R		
R 69, 70	ERD25FJ102			C 115, 116	ECCP1392JZ		
R 71, 72	ERD25FJ683	R 251	ERD25FJ331	C 117, 118	ECEA1HS100		
R 101, 102	ERD25FJ273	R 301, 302	ERD25FJ183	C 119, 120	ECCD1H121KC		
R 103, 104	ERD25FJ101	R 303, 304	ERD25FJ104	C 121, 122	ECQV05273JZ		
R 105, 106	ERD25FJ680	R 305, 306	ERD25FJ2702	C 123, 124	ECQV05473JZ		
R 107, 108	ERD25FJ104	R 307, 308, 309, 310	ERD25FJ223	C 125, 126	ECQV05473JZ		
R 109, 110	ERD25FJ224			C 127, 128, 129, 130, 131, 132	ECEA1HS100		
		R 311, 312	ERD25FJ223				
R 111, 112, 113, 114, 115, 116	ERD25FJ102	R 313, 314	ERD25FJ331				
R 117, 118	ERD25FJ274	R 315, 316	ERD25FJ224				
R 119, 120	ERD25FJ332						
R 121, 122	ERD25FJ473	R 317, 318	ERD25FJ102				
R 123, 124	ERD25FJ181	R 319	ERD25FJ153				
R 125, 126, 127, 128	ERD25FJ181	R 320	ERD25FJ180				
		R 321	ERD25FJ561				
R 129, 130	ERD25FJ184	R 322	ERG14AJ151P				
R 131, 132	ERD25FJ274	R 323	ERD25FJ822				
R 133, 134	ERD25FJ473	R 324	ERD25FJ103				
R 135, 136	ERD25FJ472	R 325	ERD25FJ392				
		R 326, 327	ERD25FJ684				
R 137, 138	ERD25FJ123	R 328	ERD25FJ102				
R 139, 140	ERD25FJ103						
R 141, 142	ERD25FJ153	R 401	ERG14AJ100P				
R 143, 144	ERD25FJ563	R 402	ERD25FJ681				
R 145, 146	ERD25FJ333	R 403	ERG1ANJ101				
R 147, 148	ERD25FJ563	R 404, 405	ERG14AJ181P				
R 149, 150	ERD25FJ104	R 501	ERD25FJ222				
R 151, 152	ERD25FJ222	R 502, 503	ERG1ANJ151				
R 153, 154	ERD25FJ332	R 504	ERG14AJ151P				
R 155, 156	ERD25FJ103	R 505	ERG14AJ470P				
		R 506	ERD25FJ102				
		R 507	ERD25FJ331				
R 157, 158	ERD25FJ393						
R 159, 160	ERD25FJ224	R 508, 509	ERD25FJ683				
R 161, 162, 163, 164	ERD25FJ392						
R 165, 166	ERD25FJ151						
R 167, 168	ERD25FJ152						
R 169, 170	ERD25FJ684						
R 171, 172	ERD25FJ391						
R 173, 174	ERD25FJ101						
R 175, 176	ERD25FJ103						
R 177, 178	ERD25FJ472						
R 179, 180	ERD25FJ474						
R 201, 202	ERD25FJ100						
R 203	ERD25FJ180						
R 204	ERD25FJ223						
R 205, 206	ERD25FJ683						

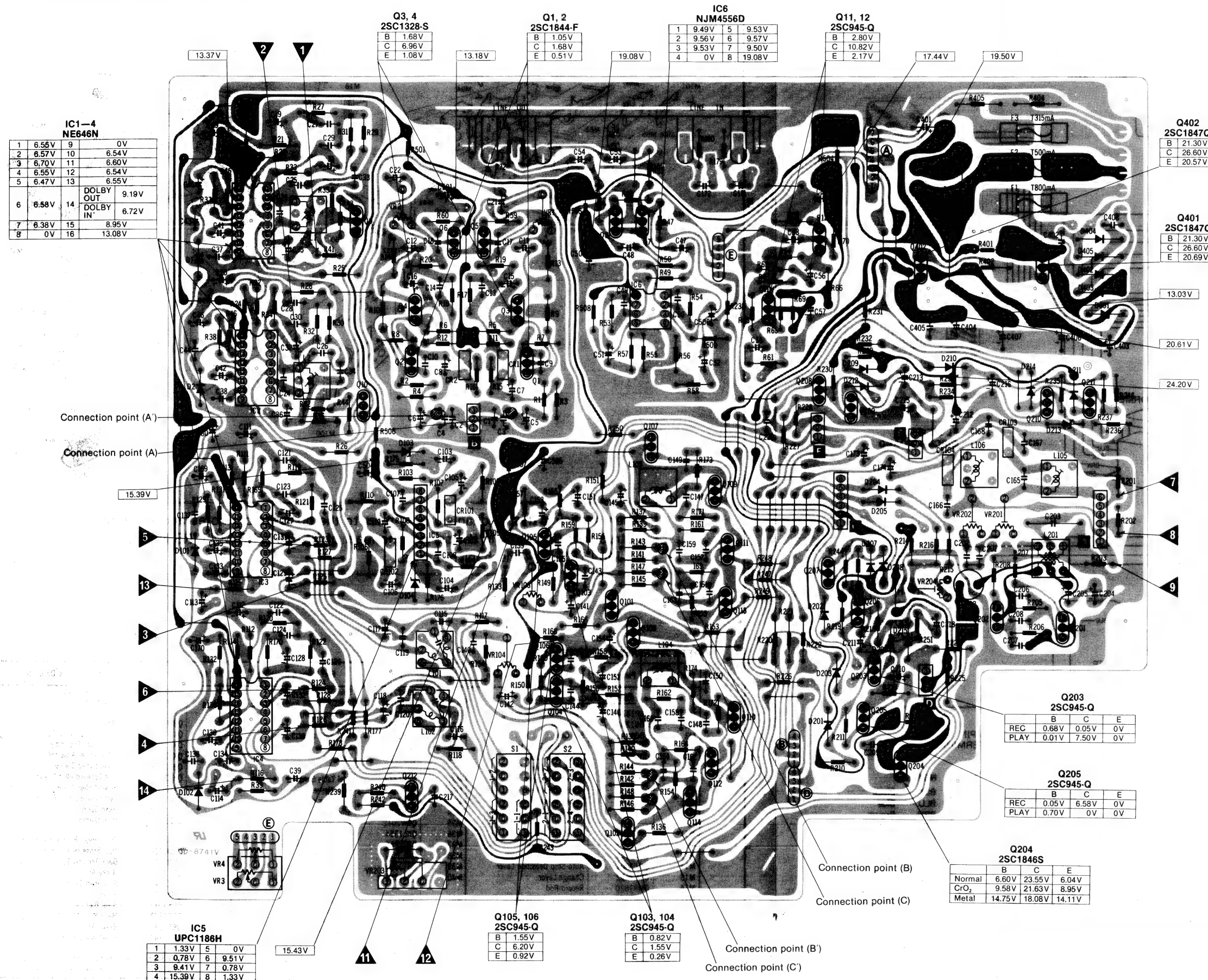
SCHEMATIC DIAGRAM



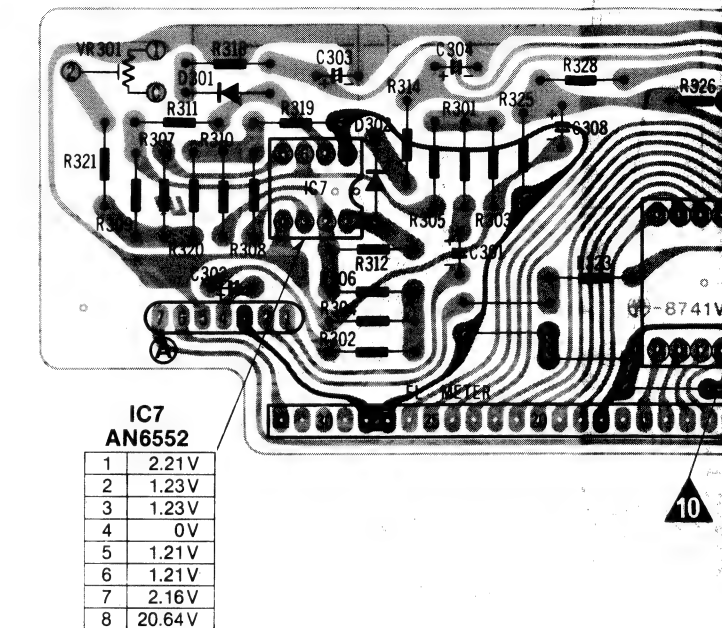


CIRCUIT BOARDS

MAIN CIRCUIT BOARD



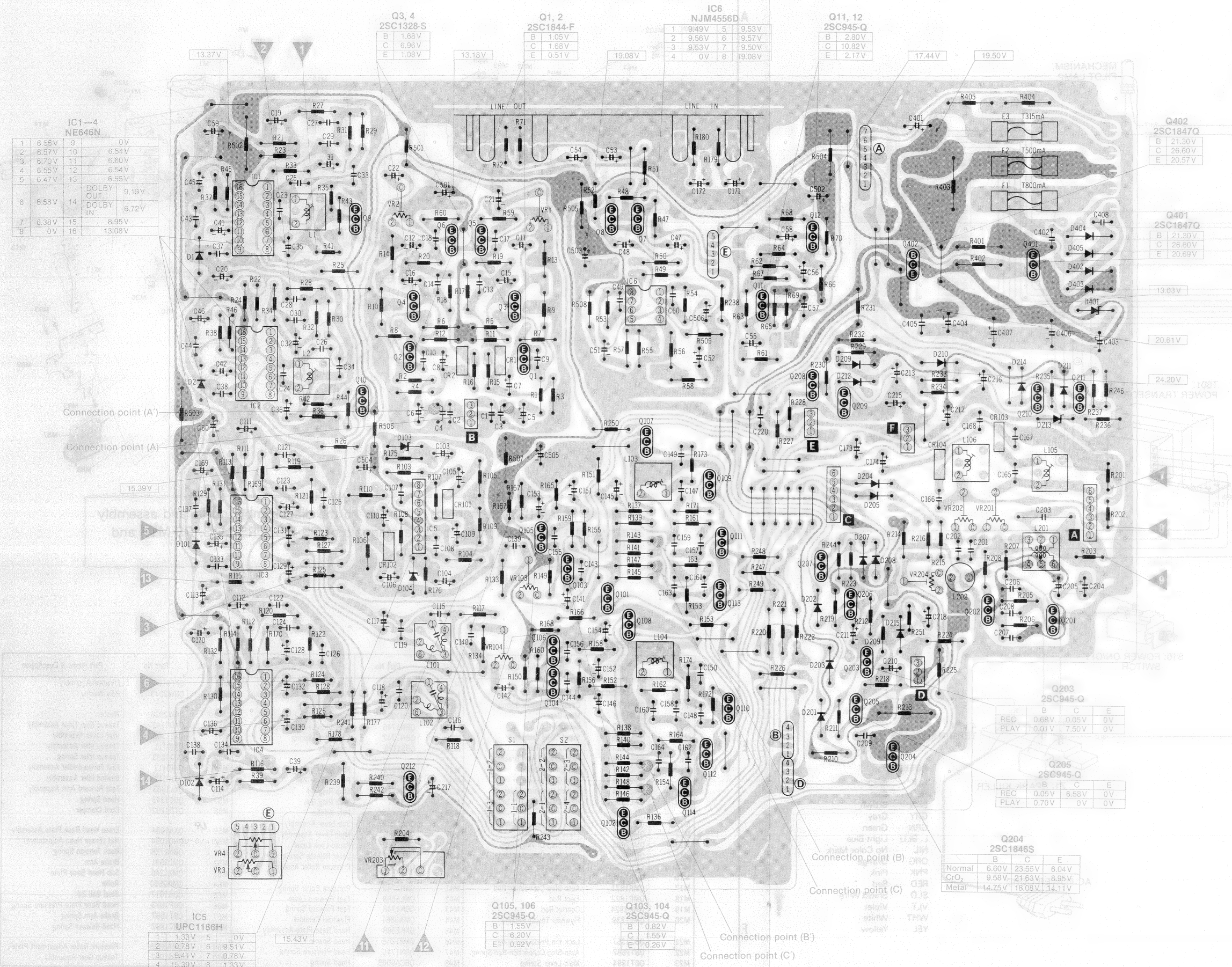
FL METER CIRCUIT BOARD

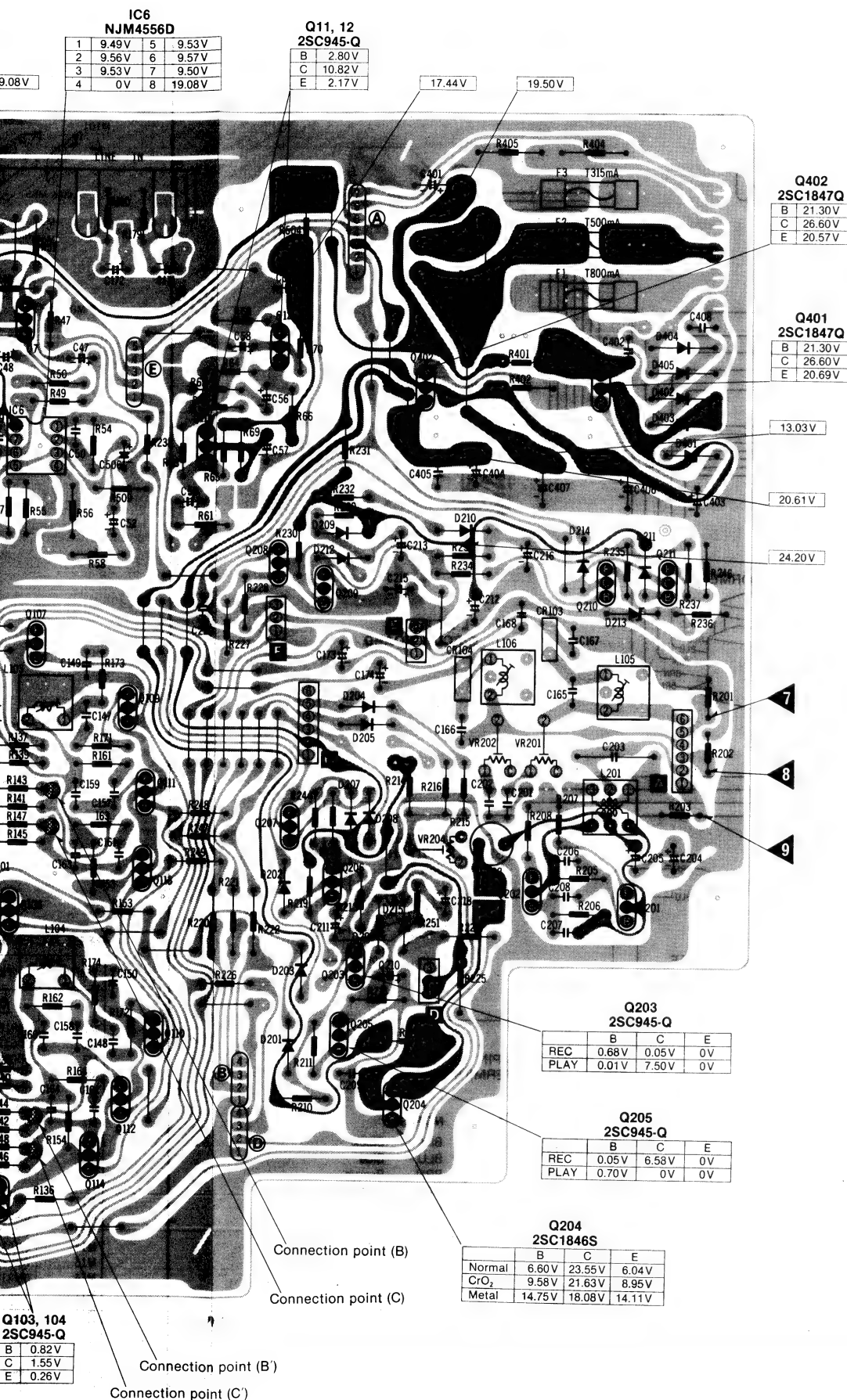


- NOTES:**
- The circuit shown in on the conductor is B+ (bias) circuit.
 - The circuit shown in on the conductor side indicates printed circuit on the back side of the printed circuit board.
 - Values indicates in are DC voltage between the ground and electrical parts.
 - All voltage values shown in circuitry are under no signal condition. Unless otherwise specified, voltage measurement conditions are that tape travel is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.
- REC Voltage at record mode.
PLAY Voltage at playback mode.
Normal Voltage at Normal tape mode.
CrO₂ Voltage at CrO₂ tape mode.
Metal Voltage at Metal tape mode.
Dolby OUT Voltage at Dolby OUT mode.
Dolby IN Voltage at Dolby IN mode.
- This circuit board diagram may be modified at any time with the development of new technology.**

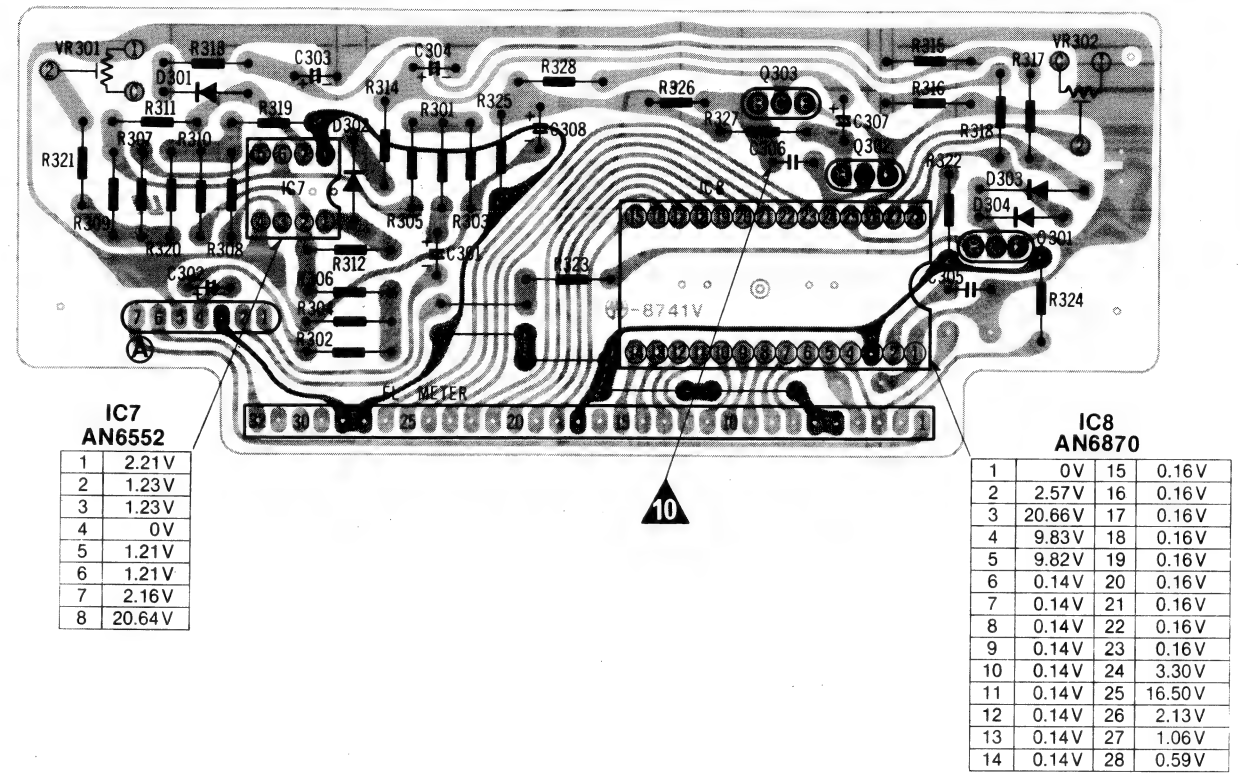
CIRCUIT BOARDS

MAIN CIRCUIT BOARD





FL METER CIRCUIT BOARD



NOTES:

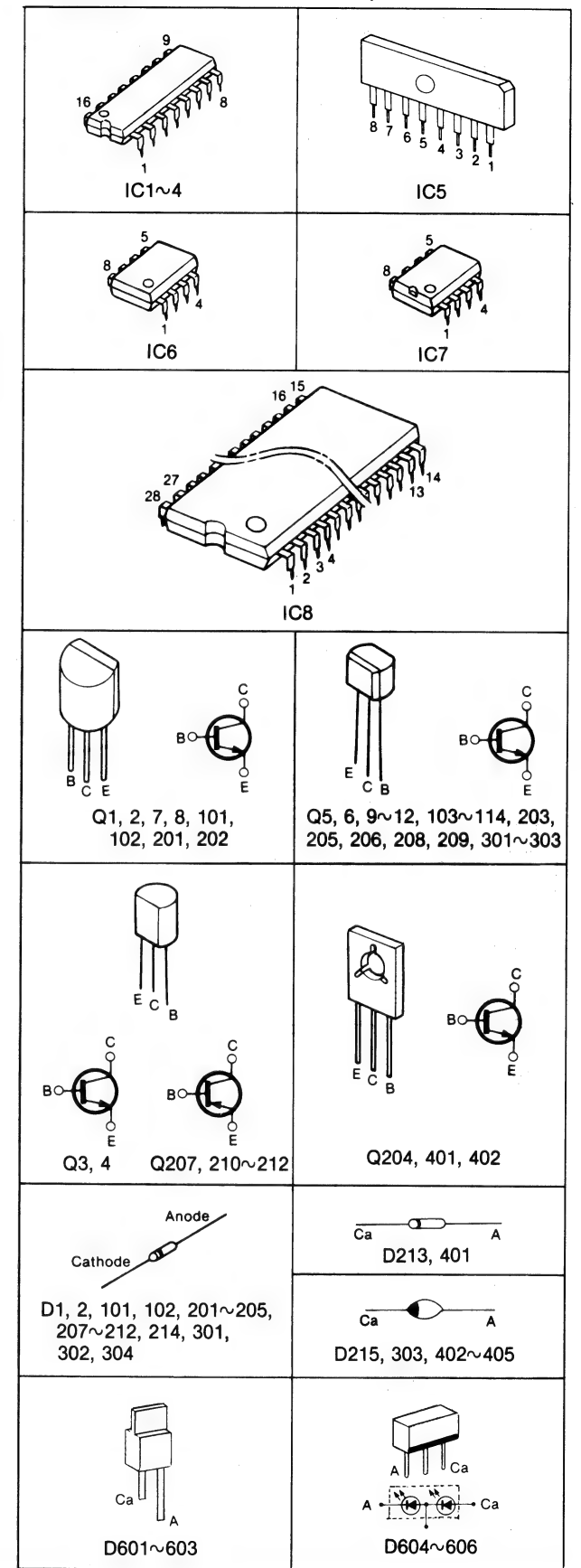
- The circuit shown in on the conductor is B+ (bias) circuit.
- The circuit shown in on the conductor side indicates printed circuit on the back side of the printed circuit board.
- Values indicates in are DC voltage between the ground and electrical parts.
- All voltage values shown in circuitry are under no signal condition.

Unless otherwise specified, voltage measurement conditions are that tape travel is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.

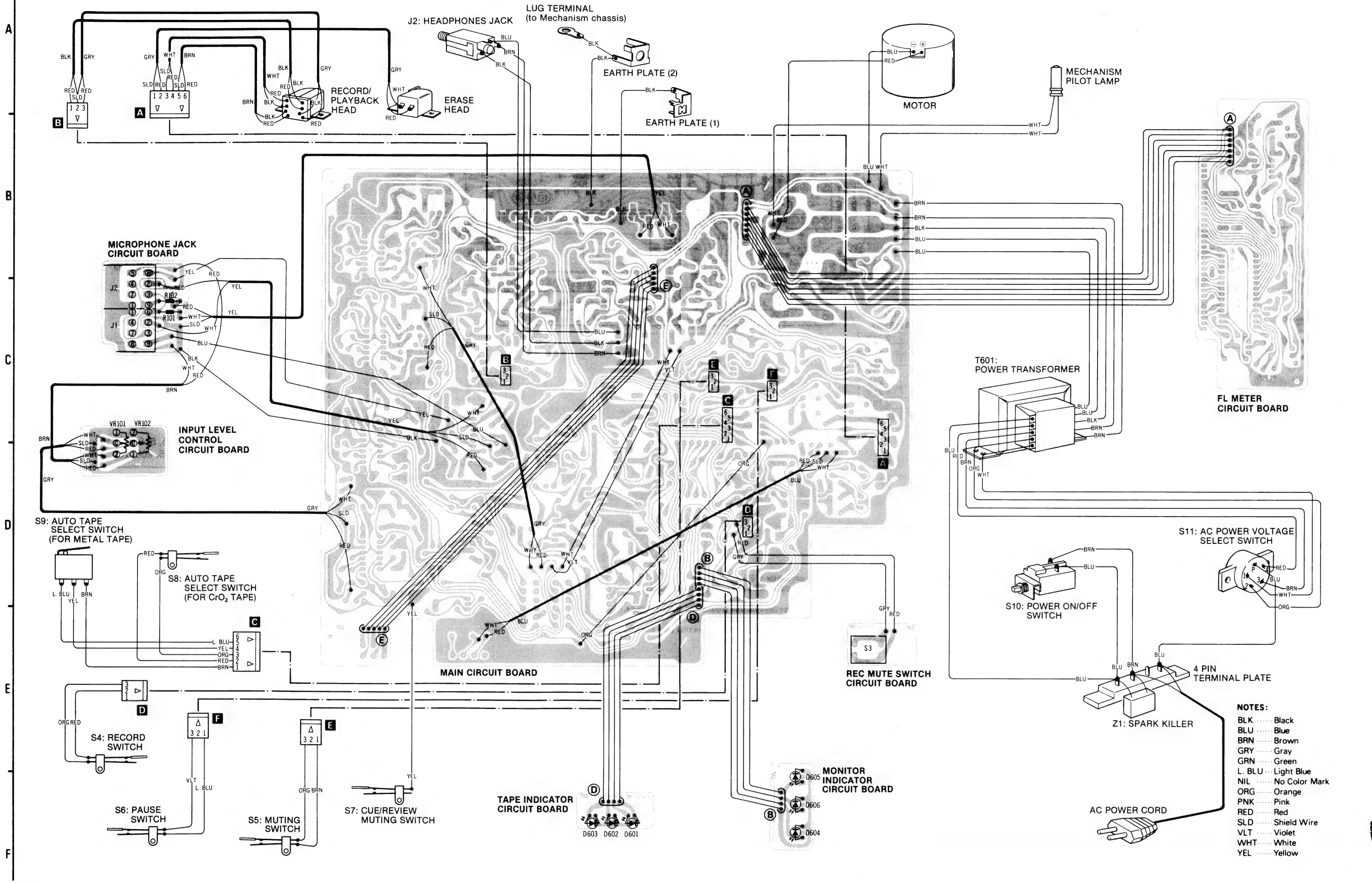
REC Voltage at record mode.
PLAY Voltage at playback mode.
Normal Voltage at Normal tape mode.
CrO₂ Voltage at CrO₂ tape mode.
Metal Voltage at Metal tape mode.
Dolby OUT Voltage at Dolby OUT mode.
Dolby IN Voltage at Dolby IN mode.

• This circuit board diagram may be modified at any time with the development of new technology.

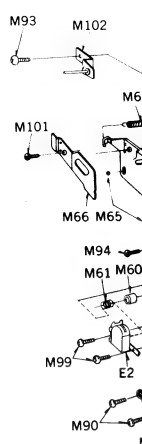
TERMINATIONS



WIRING CONNECTION DIAGRAM



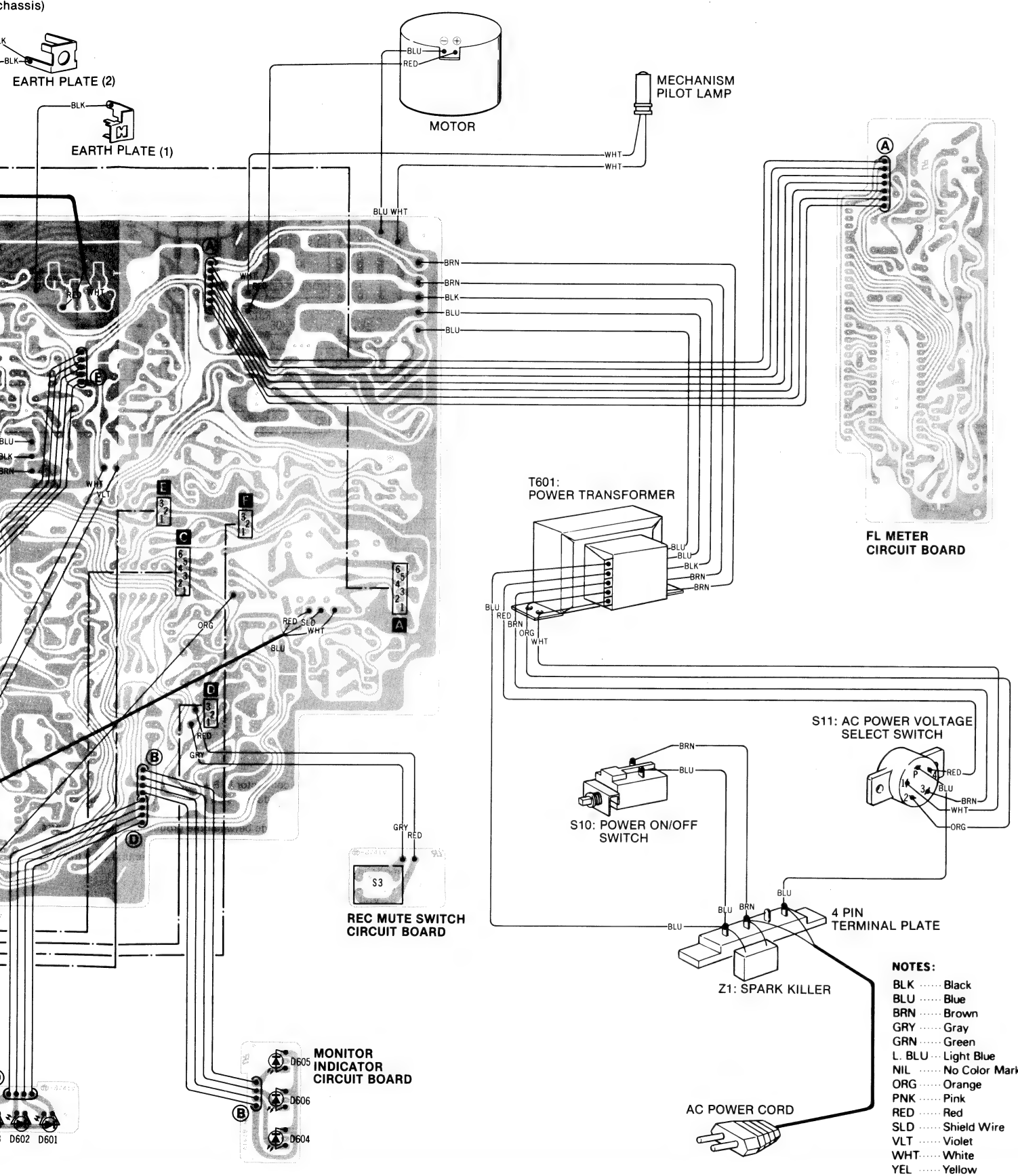
MECH (FROM



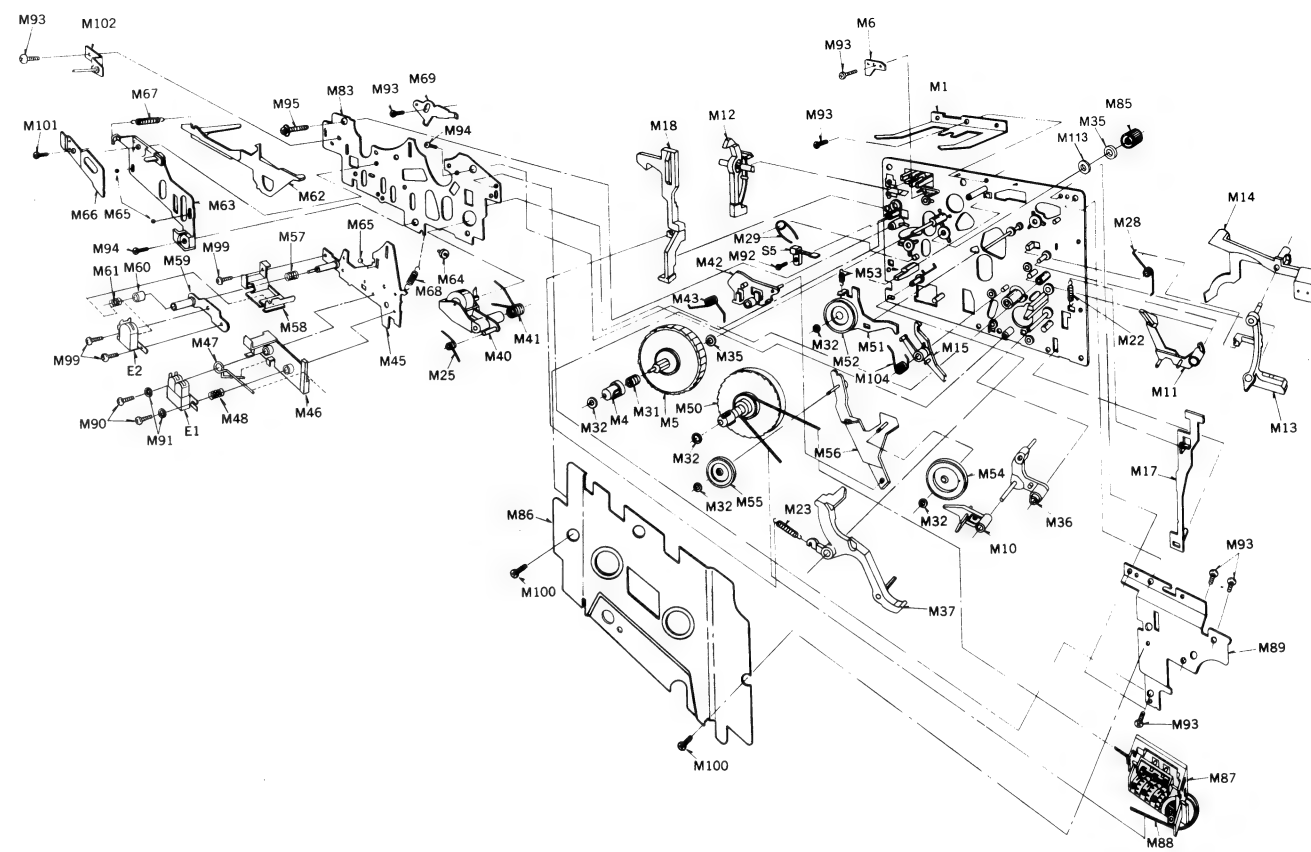
REPLACEMENT

Ref. No.	Part
M1	QBP1
M2	QDG1
M3	QDG1
M4	QMB1
M5	QDR1
M6	QMF2
M7	QML3
M8	QML3
M9	QML3
M10	QML3
M11	QML3
M12	QML3
M13	QML3
M14	QML3
M15	QML3
M16	QMR
M17	QMR
M18	QMR
M19	QMR
M20	QMZ1
M21	QBC1
M22	QBT1
M23	QBT1

chassis)



MECHANICAL PARTS LOCATION (FRONT VIEW)

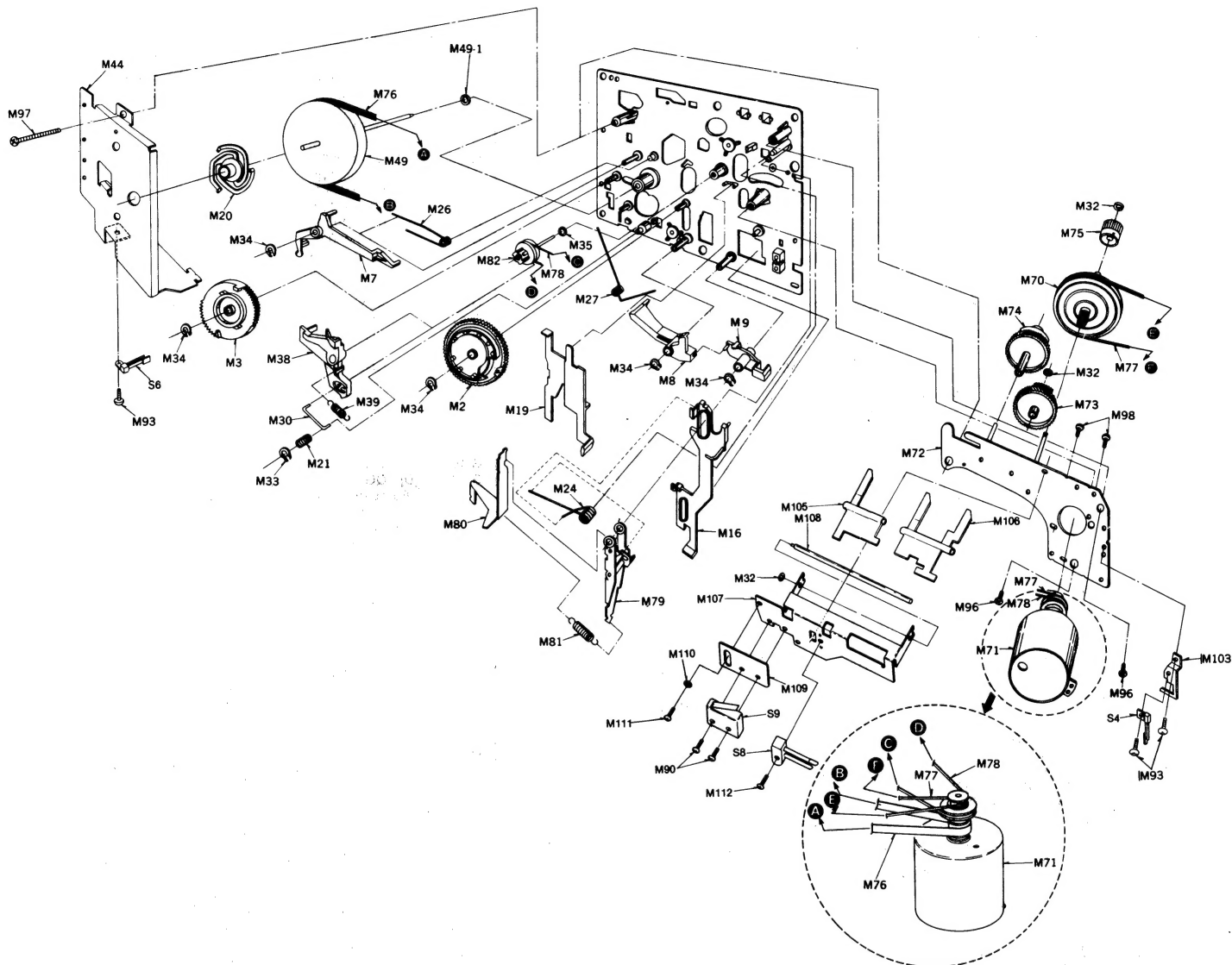


When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
MECHANICAL PARTS								
M1	QBP1874	Cassette Pressure Spring	M24	QBN1739	Selection Lever Spring	M49	QXF0164	Flywheel Assembly
M2	QDG1201	Main Gear	M25	QBN1742	Pressure Roller Release Spring	M49-1	QBW2049	Poly Washer
M3	QDG1202	Sub Gear	M26	QBN1744	Sub Gear Spring			
M4	QMB1336	Supply Reel Table Hub	M27	QBN1802	Main Gear Spring	M49-2	QBW2026	Washer
M5	QDR1139	Supply Reel Table	M28	QBN1746	Auto-Stop Lever Spring	M50	QXD1143	Takeup Reel Table Assembly
M6	QMF2118	Fast Forward Arm Bracket	M29	QBN1747	Connection Spring	M51	QXL1382	Idler Lever Assembly
M7	QML3581	Sub Control Lever	M30	QBS1128	Lock Pin	M52	QXI0111	Takeup Idler Assembly
M8	QML3583	Main Control Lever				M53	QBT1893	Takeup Idler Spring
M9	QML3584	Record Operation Lever	M31	QBC1372	Reel Table Spring	M54	QXI0113	Fast Forward Idler Assembly
M10	QML3586	Head Base Plate Lift Lever	M32	QBW2008	Poly Washer 2φ	M55	QXI0112	Rewind Idler Assembly
			M33	XUB4FT	Stop Ring 4φ	M56	QXL1383	Fast Forward Arm Assembly
			M34	XUB3FT	Stop Ring 3φ	M57	QBC1343	Head Spring
			M35	QBW2012	Poly Washer	M58	QTD1292	Cord Clamper
M11	QML3594	Auto-Stop Release Arm	M36	QXL1354	Sub Lever Assembly			
M12	QML3603	Erase Safety Lever	M37	QXL1355	Main Lever Assembly	M59	QXA1084	Erase Head Base Plate Assembly
M13	QML3604	Auto-Stop Driving Lever	M38	QML3582	Pause Lock Lever	M60	QNO1094	Nut (Erase Head Adjustment)
M14	QML3605	Auto-Stop Detection Lever	M39	QBT1896	Lever Release Spring	M61	QBN1788	Back Tension Spring
M15	QML3592	Change Lever	M40	QXL1381	Pressure Roller Assembly	M62	QML3591	Brake Arm
M16	QMR1820	Record Rod				M63	QMZ1240	Sub Head Base Plate
M17	QMR1821	Auto-Stop Connection Rod	M41	QBN1743	Pressure Roller Spring	M64	QMN2550	Roller
M18	QMR1822	Eject Rod	M42	QML3588	Fast Forward Lever	M65	QDK1017	Steel Ball 2φ
M19	QMR1824	Control Rod	M43	QBN1748	Fast Forward Spring	M66	QBP1873	Head Base Plate Pressure Spring
M20	QMZ1239	Flywheel Thrust Retainer	M44	QMA3861	Flywheel Retainer	M67	QBT1597	Brake Arm Spring
			M45	QXK2388	Head Base Plate Assembly	M68	QBT1892	Head Release Spring
M21	QBC1357	Lock Pin Pressure Spring	M46	QMZ1258	Head Spacer			
M22	QBT1682	Auto-Stop Connection Rod Spring	M47	QBN1740	Head Pressure Spring	M69	QMA3858	Pressure Roller Adjustment Plate
M23	QBT1894	Main Lever Spring	M48	QBCA0008	Head Spring	M70	QXG1047	Takeup Gear Assembly

(REAR VIEW)

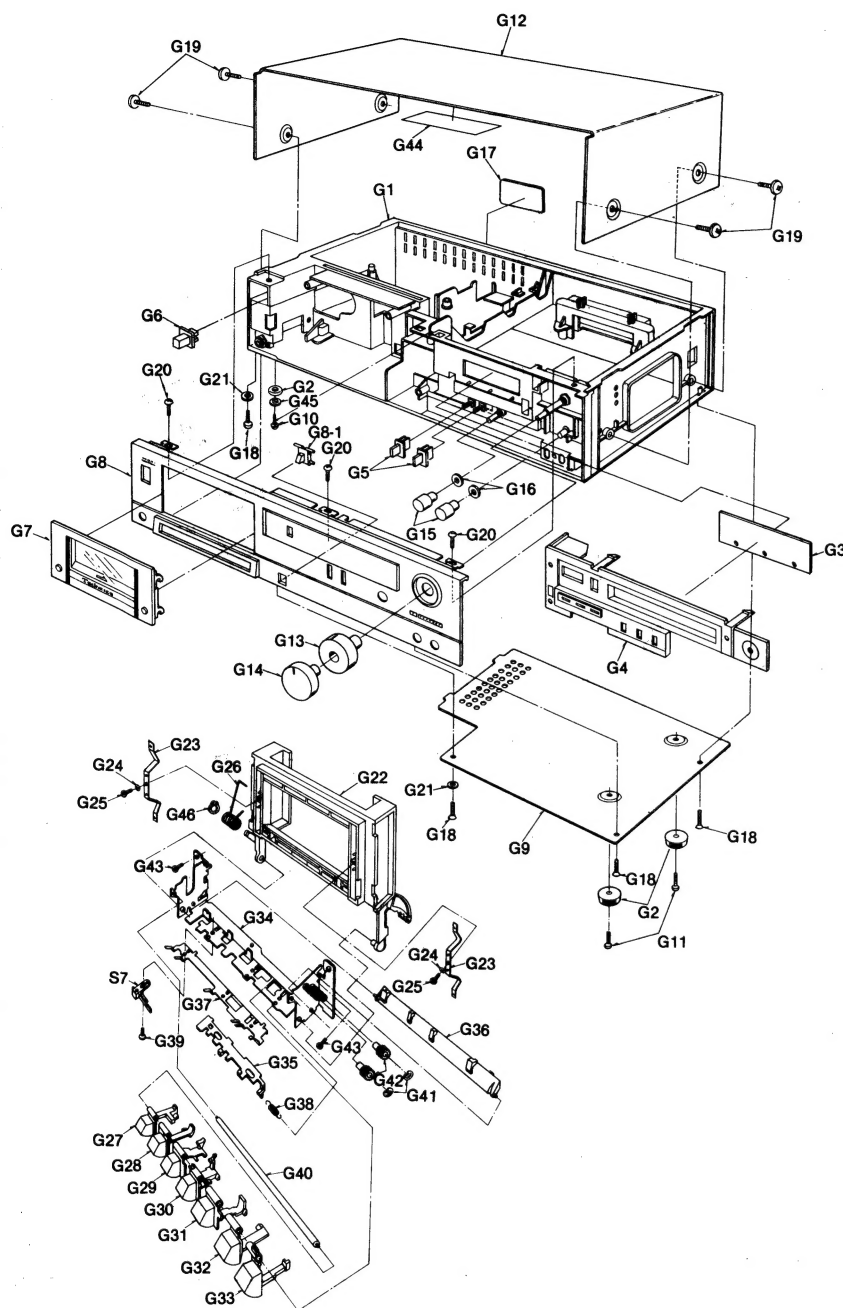


Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
M71	QXU0170	Motor Assembly	M92	XTN2+6B	Tapping Screw $\varnothing 2 \times 6$
M72	QXK2286	Sub Chassis Assembly	M93	XTN26+6B	Tapping Screw $\varnothing 2.6 \times 6$
M73	QDG1199	Auto-Stop Gear	M94	XTN26+10B	Tapping Screw $\varnothing 2.6 \times 10$
M74	QDG1200	Cam Gear	M95	XTN26+12B	Tapping Screw $\varnothing 2.6 \times 12$
M75	QDP1823	Connection Pulley	M96	XTN3+10B	Tapping Screw $\varnothing 3 \times 10$
M76	QDB0273	Fast Forward Belt	M97	XTN3+24B	Tapping Screw $\varnothing 3 \times 24$
M77	QDB0281	Capstan Belt	M98	XSN26+3	Screw $\varnothing 2.6 \times 3$
M78	QDB0274	Takeup Belt	M99	XSN2+3	Screw $\varnothing 2 \times 3$
M79	QXL1360	Record/Playback Selection Arm Assembly	M100	XTN26+6BFZ	Tapping Screw $\varnothing 2.6 \times 6$
M80	QML3580	Record/Playback Selection Lever	M101	XTS26+8B	Tapping Screw $\varnothing 2.6 \times 8$
M81	QBT1895	Record/Playback Selection Lever Spring	M102	QXA1086	Sub Angle Assembly
M82	QXP0607	Fast Forward Connection Pulley Assembly	M103	QMA4011	Switch Angle
M83	QMK1838	Upper Base Plate	M104	QBN1741	Change Lever Spring
M85	QDP1828	Fast Forward Pulley	M105	QML3644	Tape Detection Lever-A (for Metal Tape)
M86	QXH0393	Chassis Cover Assembly	M106	QML3645	Tape Detection Lever-B (for CrO ₂ Tape)
	"Silver Type"		M107	QMA3920	Detection Lever Angle
	QXH0393K	"	M108	QMS2546	Detection Lever Shaft
	"Black Type"		M109	QMF1682	Switch Retaining Plate
M87	QXC0075	Tape Counter	M110	XWC26B	Washer 2.6 ϕ
M88	QDB0240	Counter Belt	M111	XSN26+6	Screw $\varnothing 2.6 \times 6$
M89	QMA3860	Counter Angle	M112	XSN2+6	Screw $\varnothing 2 \times 6$
M90	XSN2+10	Screw $\varnothing 2 \times 10$	M113	QBW2085	Poly Washer
M91	XWG2	Washer 2 ϕ			

SPECIFICATIONS

Pressure of pressure roller	350 \pm 50 g
Takeup tension * Use cassette torque meter ... QZZSRKCT	45 \pm 15 g-cm
Wow and flutter; (JIS) * Use test tape ... QZZCWAT	Less than 0.06% (WRMS)

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description
CABINET PARTS		
G 1	QKMM0041K	Main Case
G 2	QKA1083	Rubber Foot
G 3	QKJM0075	Meter Filter
	"Silver Type"	
	QKJM0075Y	
	"Black Type"	
G 4	QGGK0162	Meter Cover
	"Silver Type"	
	QGGK0162K	
	"Black Type"	
G 5	QGO1694S	Push Button (Monitor/Dolby NR)

Ref No.	Part No.	Part Name & Description
G 6	QGOM0085	Push Button (Power ON/OFF)
G 7	QYFM0054	Cassette Lid Assembly
	"Silver Type"	
	QYFM0054K	
	"Black Type"	
G 8	QYPM0057	Front Panel Assembly
	"Silver Type"	
	QYPM0057K	
	"Black Type"	
G 8-1	QGOM0037S	Record Mute Button
G 9	QYCM0026	Bottom Cover
	"Silver Type"	
	QYCM0026K	
	"Black Type"	
G 10	XTN3 + 10B	Tapping Screw
G 11	QHQ1313	Screw
G 12	QGC1182S	Case Cover
	"Silver Type"	
	QGC1182K	
	"Black Type"	
G 13	QYT0641	Volume Knob-R
G 14	QYT0642	Volume Knob-L
G 15	QYT0643	Control Knob (Bias Adjust/Output Level)
G 16	QGH0115	Shelter
G 17	[D] QGSM0157	Main Name Plate
	[For all European areas except United Kingdom.]	
	[B] QGSM0158	Main Name Plate
	[For United Kingdom.]	
G 18	XTN3 + 10B	Tapping Screw
G 19	XTB4 + 10BFN	Tapping Screw
	"Silver Type"	
	XTB4 + 10BFZ	
	"Black Type"	
G 20	XTS3 + 10B	Tapping Screw
G 21	XWC3B	Washer
G 22	QKFM6005K	Cassette Holder
G 23	QBP1900	Spring
G 24	XWG26	Washer
G 25	XTN26 + 6BFZ	Tapping Screw
G 26	QBN7008	Spring
G 27	QXL1493	Eject Button Assembly
G 28	QXL1494	Record Button Assembly
G 29	QXL1495	Rewind/Review Button Assembly
G 30	QXL1496	Fast Forward/Cue Button Assembly
G 31	QXL1497	Playback Button Assembly
G 32	QXL1498	Stop Button Assembly
G 33	QXL1499	Pause Button Assembly
G 34	QXA1044	Operation Button Angle
G 35	QMR1823	Obstruction Rod
G 36	QML3593	Lock Arm
G 37	QBP1875	Operation Lever Spring
G 38	QBT1597	Obstruction Rod Spring
G 39	XTN2 + 6B	Tapping Screw
G 40	QMN2554	Shaft
G 41	QBW2082	Washer
G 42	QDG1102	Gear
G 43	XTN26 + 6B	Tapping Screw
G 44	QGH2043	Spacer
G 45	XWG3	Washer
G 46	XUB5FT	Stop Ring

ACCESSORIES

A 1	QEB0125	Connection Cord
A 2	[D] QQT3182	Instruction Book
	[For all European areas except United Kingdom.]	
	[B] QQT3183	Instruction Book
	[For United Kingdom.]	

PACKINGS

P 1	XZB15X20A05	Poly Bag (for Connection Cord)
P 2	QPNM0180	Inside Carton
P 3	QPAM0042	Cushion-R
P 4	QPAM0043	Cushion-L
P 5	XZB50X65A02	Poly Bag (for Unit)
P 6	QPG1985	Pad
P 7	QPQ1052	Poly Sheet (for AC Power Cord)

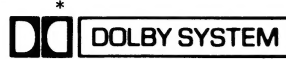
Service Manual

Cassette Deck

RS-M263

 (Silver Face)
(Black Face)

3-Head Cassette Deck with Auto Tape Selector

Supplement-1


Please use this manual together with the service manual for model No. RS-M263 (original) order No. ARD81100099C2-13.

This is the Service Manual for the following areas.

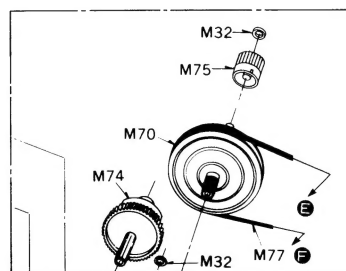
- ☐ For all European areas except United Kingdom.
☐ For United Kingdom.

PARTS COMPARISON TABLE :

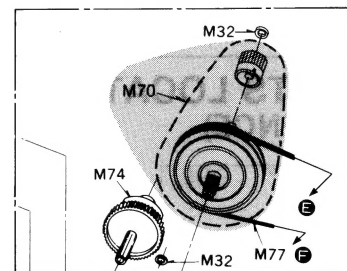
Please revise the original parts list in the Service Manual to conform to the changes shown herein.
If new parts number are shown, be sure to use them when ordering parts.

Ref. No.	Parts Name & Description	Parts Number		Remarks
		Former Type	New Type	
M70	Takeup Gear Assembly	QXG1047	QZK0241 (M70)	
M75	Connection Pulley	QDP1823		
R161, 162	Resistor	ERD25FJ392 (3.9k Ω)	ERD25FJ822 (8.2k Ω)	
R216	Resistor	ERD25TJ333 (33k Ω)	ERD25TJ393 (39k Ω)	
R217	Resistor		ERD25TJ224 (220k Ω)	Added
R301, 302	Resistor	ERD25TJ183 (18k Ω)	ERD25TJ153 (15k Ω)	
R321	Resistor	ERD25FJ561 (560 Ω)		Deleted
R404, 405	Resistor	ERQ14AJ181P (180 Ω)	ERD2FCG181G (180 Ω)	
R504	Resistor	ERQ14AJ151P (150 Ω)	ERD25FJ271 (270 Ω)	
C157, 158	Capacitor	ECQV05183JZ	ECQV05822JZ (0.0082 μ F)	
C159, 160	Capacitor	ECQV05223JZ	ECQV05183JZ (0.018 μ F)	
C161, 162	Capacitor	ECQV05183JZ	ECQV05822JZ (0.0082 μ F)	
C163, 164	Capacitor	ECQV05103JZ	ECQV05153JZ (0.015 μ F)	
C209	Capacitor	ECKD1H102KB		Deleted
C214	Capacitor		ECEA25Z4R7 (25V 4.7 μ F)	Added
C218	Capacitor	ECEA1ES101 (25V 100 μ F)	ECEA1HS100 (25V 10 μ F)	
D216	Diode		MA161	Added
D305	Diode		MA161	Added
D402, 403, 404, 405	Diode	MV121LF	SM112	
S3	Switch (REC MUTE ON/OFF)	EVQPAP11K	EVQPAR11K	
E49	Meter Cushion		QBMM0019	Added
E50	Porcelain Tube		QZE0003	Added
G9	Bottom Cover "Black Type"	QYCM0026K	QYCM0026	
G9-1	Rubber Foot		QKA1083	Added
G9-2	Screw		QHQ1313	Added
G11	Screw	QHQ1313		Deleted

MECHANICAL PARTS LOCATION (DIFFERENCE)



Former Type



New Type

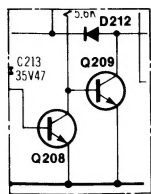
* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

Technics

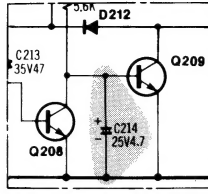
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

SCHEMATIC DIAGRAM

(ADDITION)

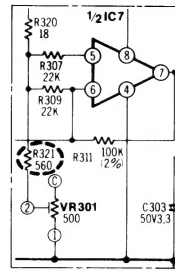


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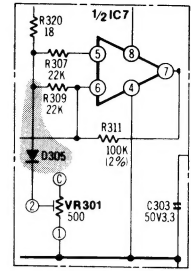


New Type

(DIFFERENCE)

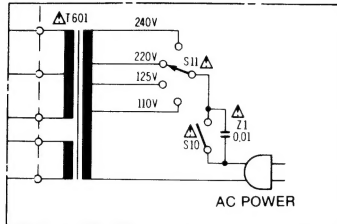


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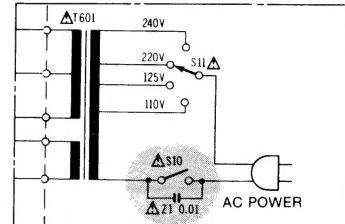


New Type

(CORRECTION)

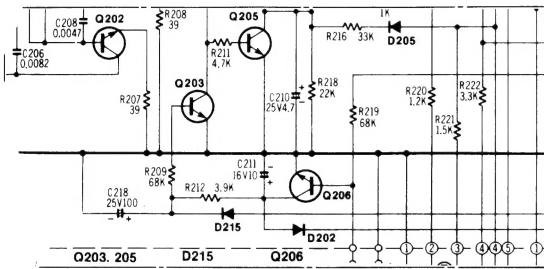


Former Type

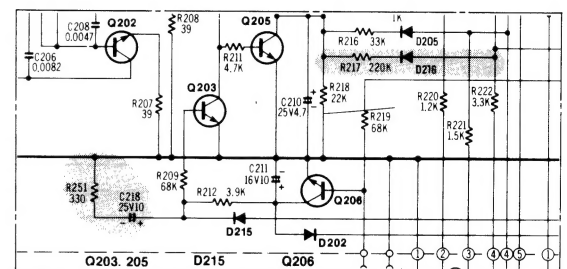


New Type

(ADDITION)



Former Type



New Type

CIRCUIT BOARD

(ADDITION)

